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Original Communications.

A STUDY OF THE PHYSIOLOGICAL AND THERAPEUTIC EFFECTS OF ADONIDIN.

By Hobart Amory Hare, M.D. (Univ. of Pa.).*

THE adonis vernalis has for many years been used empirically in Russia as a remedy for all forms of cardiac failure; but until the clinical observations of Buhnow, of St. Petersburg, were made in 1879 nothing was known of the action of the drug.† In 1882, Vincenzo Cervello, of Strasburg, made a limited research in regard to its action on man and animals, and it is to him that we owe the discovery of the glucoside, the effects of which this paper describes.‡ Following these researches came those of Lesage in 1884, which were carried out in the laboratory of Germain Sée at the Hôtel Dieu. In the same year Durand, of Paris, published his elaborate monograph, entitled "De l'Action Comparée des Médicaments Cardiaques," in which he gives the results of a number of clinical studies of great value.

Almost at the same time there also appeared in the *International Journal of Med-*

* Physician to the Children's Dispensary of the University Hospital and to St. Clement's Dispensary.

† St. Petersburger Medicinische Wochenschrift, January 6, 1879.

‡ Archiv. für Exp. Path. and Pharm., t. xv., 1882.

ical Sciences a clinical article by Dr. Gastano Traversa,* and another elsewhere by Dr. Gluzinski,† in which the virtues of adonis vernalis and its glucoside were highly praised.

Still more recently, Huchard presented, on December 23, 1885, in the Société de Thérapeutique, cardiographic and sphygmographic tracings taken from persons under the influence of adonidin, and also described the effects produced in the rabbit when the drug is given hypodermically. Lastly, Dr. J. C. Wilson, of Philadelphia, has published a paper in the *Medical News* for January 2, 1886, on the action of the drug.

As nearly all the observers mentioned have confined their researches more to the purely clinical aspects of this medicament than to a study of its physiological properties, and as they all report such favorable results from its use at the bedside, it occurred to me that a thorough experimental research on the physiological action of the remedy might be of value, and to this end the following experiments were performed.

If the heart of a normal frog be cut out and placed in a solution of adonidin of the strength of 2 grs. to the ounce, the movements are for a moment more rapid than before, but soon become slower. Under these circumstances the cardiac movements become slow, not because diastole or systole is prolonged, but because the cycle of cardiac movement is imperfectly performed, the heart-muscle seeming too weary either to contract or expand. When the same solution is placed in the pericardial sac of a frog, the centric nervous apparatus being left untouched along with the circulatory system, previous to the increase of rate seen in the isolated heart comes a short stage, in which the cardiac movements are slowed, apparently by pneumogastric stimulation, for the diastolic pauses are the portions of the cycle which are prolonged. Along with this slowing, the heart-muscle contracts much more thoroughly, and arterial pressure is increased, for the blood-vessels in the mesentery of a frog can be seen to decrease their lumen. Soon, however, the inhibition of movement seems to be removed or overpowered, for the pulse-rate is increased greatly. This condition of rapid movement continues for a short time, and finally the heart again becomes slow, with the slowness of weakness, the movements being like those already described in connection with the isolated heart. In both the isolated heart and the heart *in situ* diastole ends the scene. Two questions now arise: namely, what is the cause of this stoppage in diastole, and what produces the slowing of the cardiac rate occurring in the heart when lying in its sac.

The diastolic arrest of the isolated heart can only be due to one of two things,—either the inhibitory cardiac apparatus is stimulated, or the heart-muscle and its motor ganglia are depressed. The latter seems far more likely, not only from analogy but from the fact that in the experiments performed on the non-eviscerated heart of frogs, the inhibitory nervous apparatus was found to be stimulated centrically and not peripherally; and furthermore, the very character of the slowing of the isolated heart showed it to be due not to stimulation but to increasing depression.

That the vagi are not stimulated peripherally by this drug at any time was proved by the following experiments, and also by the results of the observations on the action of the drug upon dogs, which will be described farther on.

If the inhibitory nerves be cut before the adonidin is placed in the pericardial sac, the usual increase in rate under such circumstances takes place, and the addition of a small quantity of the drug now immediately increases the rate still further, without the appearance of any primary stage of slowing of rate. This proves that the primary slowing occurring when the vagi are intact must be due to exaltation of their function, and also proves that the drug must directly stimulate the heart-muscle; for the rapid rate under these circumstances is not one of weakness but of power. It should not be forgotten that this drug in large quantities finally stops the heart in diastole, whether the vagi are intact or divided. In small quantities it does not produce the primary slowing of the pulse, nor does it bring on the peculiar weak and imperfect movements which have already been described as occurring before death. In other words, it requires large doses to affect the pneumogastric, and large doses to depress the heart-muscle.

One more point is to be decided. Is the rapid stage following the primary slow stage in the viscus *in situ* due to paralysis of the vagi, to direct stimulation of the heart which overcomes inhibition, or to both? While I am unable to state whether over-stimulation takes place, it is a fact that the pneumogastric nerves are certainly in this second stage de-

* Medical Times and Gazette, October 21, 1885.

† Quoted by the THERAPEUTIC GAZETTE, July 15, 1885, p. 475.

pressed by the drug, for galvanization of these nerve-trunks during this stage failed to produce as marked a slowing of rate as should have occurred, provided the inhibitory pathway was open. From this point we may conclude that although the stimulation of inhibition in the first stage is centric, the paresis of inhibition in the second stage is peripheral. The same changes are present when the drug is injected into the posterior lymph-sac of a frog. The animal soon becomes passive and immovable, and dies shortly, so quietly that its death is not noted until he is handled.

That the high arterial pressure produced by this drug is due in part to centric stimulation of the vaso-motor system is proved by the fact that the mesenteric blood-vessels are seen to dilate after section of the spinal cord. Further evidence of this fact was adduced when studying the influence of the glucoside on the circulation of mammals, for there is but little, if any, difference in the action of adonidin on the dog and frog.

The injection of the quarter of a grain of adonidin into the jugular vein of a dog, weighing twenty-five pounds, causes a great increase of cardiac force and arterial pressure, and a marked decrease in pulse-rate. Following this stage of exaltation of force and pressure comes a marked fall of arterial tension, and, as is usual, a decrease of pulse-force, with an increase of pulse-rate. This condition remains the same for some time, until at last the heart beats irregularly, and stops in diastole, just as did the heart of the lower animals. We have, therefore, several stages to be accounted for in the action of this drug on the dog, viz., the increase in arterial pressure in cardiac force, and decrease in pulse-rate, in the first stage; the fall of arterial pressure and force, and increase of pulse-rate, in the second stage; and the arrest of the heart in diastole at the end of the third stage. Turning attention to the rise in arterial pressure, the writer eliminated all danger of a rise due to asphyxia by curarizing the dog, artificial respiration being maintained. Under these circumstances arterial pressure was increased as greatly as when the animal was not curarized. What, then, is the cause for this rise in arterial pressure? Probably two factors lie at the bottom of this condition, namely, centric vaso-motor stimulation, aided by increased cardiac force, for when the spinal cord was divided high up in the cervical region, thereby producing vaso-motor palsy, the rise in pressure under the influence of adonidin was of course less marked, and the rise which did occur must have been due to increased cardiac force.*

The experiment on the fourth dog was made to discover how the slowing of the pulse was produced in the first stage. One-fourth grain of the drug was administered in the same manner as before, the animal having first been curarized. No sooner was the slowing of the heart-beat most marked than the vagi were divided, and instantly the pulse was increased from 102 to 192 per minute, proving that the slowing was due to stimulation of inhibition, and that this stimulation was centric. The increase in force has already been shown to be due to a direct stimulant action of the drug on the heart itself.

In regard to the symptoms of the second stage, we find that the fall of arterial pressure is due to palsy of the vaso-motor system, since, when the cord is intact, galvanization of the sciatic nerve or asphyxia did not bring about increased pressure.

The decrease in pulse-force is due to the depressing action of the drug on the heart itself, as is also the arrest in diastole. The increase in pulse-rate is due to inhibitory failure, for in the dog, as well as in the frog, galvanization of the vagi failed to slow the heart.

In the next experiment the dose of the drug used was much smaller than before, since it had become evident that the larger doses were absolutely toxic in their character. An eighth of a grain was, therefore, injected into the dog's jugular vein, curare and artificial respiration being used. As a result, I found that in small doses this glucoside does not cause any primary slowing of the heart, but increases its frequency, its force, and the arterial pressure from the first, all three of these features being permanent and constant under the smaller dose. Even with this dose, however, the animal died. A twelfth of a grain given slowly to a large dog did not produce death nor a primary slowing in rate, but seemed to increase rate, force, and pressure. In this last experiment no tracing was taken, the jugular vein only being exposed.

I should have stated before that when I poisoned a small dog by a large dose of adonidin there were symptoms of nausea and intestinal spasm, accompanied by the expulsion of fæces. The animal had no convulsions or spasms, but lay on its side, with pupils widely dilated. When death occurred, respiration

* That the cord was thoroughly divided is proved by the fact that asphyxia failed to cause any rise in pressure.

continued some moments after the heart stopped.

ACTION ON THE NERVOUS SYSTEM.

When an eighth of a grain of adonidin is injected under the skin of a medium-sized frog, in a few moments he becomes drowsy and disinclined to move. When a jump is attempted it is incoördinated and clumsy, and a succession of leaps is of rare occurrence. Pricking with a pin now fails to produce any reflex drawing away of the leg which is irritated, and in the course of five minutes following the administration of the drug he permits the foot to crackle in the flame of a gas-jet. That this is not due to a loss of power is proved by the fact that if the amphibian so wills he can leap from place to place, and we therefore must conclude that paralysis of sensation has taken place somewhere in the course of the afferent nervous system. That this effect of the drug is on the sensory tract of the spinal cord is proved by the fact that if the artery of one leg be tied and the poison given above it, each leg fails to be drawn away from the fire.

If another frog is now taken, and a hypodermic of strychnine and adonidin be injected into his posterior lymph-sac, the symptoms produced by the excito-motor are temporarily much decreased in violence, their more decided action coming on only when the strychnine has been absorbed to such an extent as to overpower the more feeble drug. From the first the sensory side of the nervous system is considerably depressed, and a sensory impulse of a very decided character is required to produce a convulsion. Pricking with a pin in any portion of the body fails to cause even a limited spasm, and finally burning of the foot does not cause any explosion of motor impulse. A very beautiful example of the escape of the auditory nerve during otherwise total sensory paralysis from this drug was demonstrated in this experiment.

While no amount of pricking and burning sent a sufficient sensory impulse to the centres in the cord to excite the motor centres, the scratching of a parlor-match, or a sharp blow with the knuckle on a tin can near by, invariably caused a convulsion. Other frogs being taken, their hind legs were severed from their bodies in such a way that the sciatic nerves were the only fibres which bound the legs to the trunk. Adonidin was now injected into one leg below the section, and strychnine was given hypodermically into the lymph-sac on the back. In a few moments a strychnic convulsion came on, which affected equally both legs, showing that the motor nerve-trunks are not affected by adonidin. This experiment also showed that the drug under consideration does not affect the muscles themselves, and galvanization of the muscles failed to show any decrease in their irritability. Galvanization of the sciatic in the poisoned leg failed to show any paresis of that nerve, since it conveyed the impulse to the cord and produced a strychnic spasm. That the peripheral filaments of the sensory nervous apparatus remain unaffected during the poisoning is shown by the fact that, when the tips of the toes of the hind leg which had been poisoned and separated from the trunk, but for the sciatic, are stimulated, the impulse is carried to the spinal centres.

In regard to the practical use of this remedy, one word must be said before closing.

Only one observer, out of many, has reported disadvantageous results from its use, namely, Lublinski, who found that in his cases the drug produced vomiting and diarrhœa. These untoward symptoms must have been due to some mistake in the size of the dose, for in a patient of Durand, who took by mistake 3 grs. of the glucoside, the same symptoms appeared. Perfect recovery was soon reached in this case, although the boy was only 14 years of age.

Durand and others all declare that adonidin is possessed of far greater diuretic properties than is digitalis. Thus, we find that Traversa (*loc. cit.*) says, "It increases the quantity of urine passed from 300 to 400 cubic centimetres per diem to 2000 or 3000, the spec. grav. being diminished, also the total diurnal quantities of chlorides and urea." Œdema is rapidly diminished under its influence. While Durand does not believe that its cardiac effects are equal to those of digitalis, he concludes that in some cases this drug is superior to the latter remedy, particularly where a long-continued course of the glucoside is necessary, since no one has yet found it to be cumulative in its action.

The same writer thinks that convallaria and caffeine possess higher diuretic powers and less cardiac influence than adonidin.

Finally, he sums up the results of his observations as follows:

In doses of ⅓ gr. adonidin—

1. Increases arterial tension.
2. Regulates the heart-beat.
3. Diminishes the frequency of the pulse.
4. Increases the force of the cardiac contractions.

5. Acts with rapidity, its effects being only present during its administration.

6. Increases diuresis.

7. Is well tolerated.

8. That the indications for its use are the same as digitalis.

He commends its use, especially in mitral insufficiency and interstitial myocarditis, and in palpitation of the heart. Such a drug ought surely to be of signal service to the profession, for, though it is at present of high price, being made almost entirely by Merck of Darmstadt, there is no reason why a continued call for it should not make its cost within the reach of every one, the adonis vernalis being by no means rare, its rhizome having been used as an adulterant for black hellebore, and the process of obtaining the glucoside is not expensive.*

Conclusions.—Adonidin in all doses increases arterial pressure by stimulating the vaso-motor centres and by increasing the cardiac force.

In moderate doses it increases the pulse-rate and force from the first, but when large toxic doses are given, it primarily slows the heart by stimulating the pneumogastric, and then increases pulse-rate by depressing the inhibitory nerves and stimulating the accelerator apparatus.

The slowing of pulse-rate is also in all probability due in part to increased arterial pressure, as under these circumstances the blood-paths are greatly diminished in calibre.

On the nervous system the drug has but little action, unless the quantity administered be enormous. Under these conditions it paralyzes the sensory side of the cord, but has no effect on the motor tract or on the efferent or afferent nerve-trunks.

A NEW REMEDY IN CYSTITIS AND LITHIASIS—PICHI (FABIANA IMBRICATA).

By Hal. C. Wyman, M.D.†

So short a time has elapsed since this remedy was offered to the medical profession that a report on its use may seem premature. But so long as the report is confined to a simple statement of facts, leaving the reader to judge of the influence the medicine may have had in bringing about the results, no one need scruple at the evidence.

The first case in which I used the fl. ext. pichi was early in January, when my attention was called to the drug by Dr. J. E. Clerk, the chemist of this city. A Mr. G., aged 23 years, who contracted gonorrhœa a year or more ago, and who had stricture of the urethra, which I found necessary to divulse a few days before Christmas. A copious hemorrhage from the deep urethra followed the operation, and a few days later severe vesical tenesmus disturbed the patient so that sleep and appetite vanished. All the symptoms of typical cystitis speedily developed. Morphine, belladonna, hyoscyamus, and alkalies were used internally and by the rectum for a week without materially modifying the symptoms. So irritable did the bladder become that it would not retain urine longer than five to fifteen minutes. I now began the use of the fluid extract of pichi in 15-drop doses in water once in three hours. The tenesmus and pain began to decline after twenty-four hours, the mucus and pus also to diminish in quantity, and at the end of the week the bladder would retain its contents three hours without causing the patient any inconvenience.

This patient has now, March 8, fully recovered. I think the cystitis was of traumatic origin,—the harsh manipulation of the vesical mucous membrane with the divulsing apparatus. Thompson's instrument was the one used.

Mrs. F., aged 21 years, miscarried two years ago. Since then had not been well enough to do her work. She had backache, dyscinesia, leucorrhœa, rectal and vesical tenesmus. The uterus was lacerated to the depth of one-eighth of an inch on the left side of the cervix. There was marked ectropion of the lining of the cervix uteri. I thought a plastic operation closing the fissure in the cervix would cure her, and I put her under chloroform and operated in December last. She improved for a couple of weeks after the operation in all her symptoms except the vesical tenesmus; this remained the same, and gradually became worse, so that I was obliged to make another study of her case during the last week in January. The urine contained mucus and pus, was alkaline in reaction, and precipitated the phosphates in such quantities that the latter part of the stream in urinating was white as milk. She had exhibited an idiosyncrasy against the use of opiates before I subjected her to the operation for lacerated cervix, so that I did not attempt to get the virtues of those drugs, but put her at once on 15-drop doses of the fluid extract of pichi combined with 1 drachm of simple elixir. Her bladder I washed out daily

* The Pharmacist, December, 1885, p. 376.

† Surgeon West End Dispensary, Detroit, Michigan.

with a one per cent. solution of cocaine muriate, which controlled the pain admirably. The urine speedily exhibited the odor of the pichi, became acid in reaction, and held the phosphates in solution. She has made a good recovery in the place of what threatened serious progressive invalidism.

Mr. B., aged 25 years, who had been afflicted with cystitis in former years, but had not suffered any symptoms of that disease for more than a year, came under my care at Harper Hospital for the cure of fissure in ano. Under chloroform I paralyzed the sphincter by stretching it with my thumbs. While he was under the influence of the anæsthetic I explored his urethra with a No. 12 (American) sound, meeting with no resistance or impediment to the easy passage of the instrument into the bladder. Two days after this very gentle manipulation of the urinary tract (for I don't think the operation on the sphincter could have caused it) he began to pass turbid urine and to have vesical tenesmus. One-grain opium suppositories had in the mean time been used in the rectum three times a day, easing his pain but not changing the character of his urine. Pichi was now resorted to, and all symptoms of cystitis soon disappeared. At date he continues in hospital, resting for the cure of his anal fissure.

Mrs. ——, aged 27, had chronic cystitis, due to neglected retention of urine, following accouchement. She had overflow before the catheter was used to relieve her. I found it necessary to divulse her urethra to insure thorough evacuation of her bladder. It was very irritable after the operation. Pichi combined with fluid ext. hyoscyamus controlled the painful symptoms and gave the bladder the physiological rest essential to a cure.

Mr. H., aged 71 years, had been getting up nights to pass urine for the last five years. Ten months ago he found he could not empty his bladder, and was compelled to call a surgeon to use the catheter. A severe chill followed, and he was very sick for two months, having the catheter used every day. He learned to use it himself, and continued to use it daily until last February, when he had another chill, and his left testicle swelled and inflamed. He was too sick to use the instrument. I was summoned by his medical attendant in consultation, and opened a large abscess of the left testicle, and advised against further use of the catheter. His prostate was greatly enlarged. Opium and camphor suppositories relaxed the spasm of the prostatic muscles so that he got along without the catheter. His urine was heavily loaded with urates. Mucus, blood, and pus were present in abundance. He was put on fluid ext. pichi, and continued its use for three weeks. He has made an excellent recovery.

I might enumerate numbers of cases of lumbago and sciatica in the course of which urates were precipitated from the urine in large quantities, and which recovered while the patient was taking the pichi. Combined with a potassium salt I have found it to act more quickly than any other remedy in bringing about a solution of the urates and relieving the rheumatic neuralgia so frequently associated with that unstable condition known as lithuria, phosphatism, etc. A formula I have often used is,—

℞ Fl. ext. pichi, ℥i;
Potass. nitrate, ʒi;
Simple elixir, ℥iii. M.
S.—Teaspoonful once in two hours.

ARSENIC IN THE TREATMENT OF ARTHRITIS DEFORMANS.

By Karl von Ruck, M.D., Norwalk, Ohio.

HAVING met with indifferent success in the treatment of this affection by iodide of potassium and external applications of iodine, and having a patient who, after trying these remedies for some three months, was insisting upon further trial of "no matter what," I determined to resort to arsenic. The patient was a lady, 46 years of age, had passed the climacteric period, and had always enjoyed good health previous to the present difficulty, which had its beginning two years ago, and soon after nursing a near relative during a tedious and fatal illness. She attributed the difficulty to the wringing of clothes out of very hot water while doing this nursing, and so wrenching her finger-joints,—work to which she had not been accustomed. When she came under my care the third phalangeal joints of the fingers, and these alone, were affected in both hands, and the enlargement was very considerable. There was neither pain nor tenderness on pressure, but occasionally what she called rheumatic pains in the affected joints and in the forearm. During the three months whilst I treated her with iodide of potassium the enlargement and the distortion of the affected joints increased, and the second phalangeal joints of the second and third fingers in one, and of the third finger in the other hand, became markedly enlarged, and the

muscles of these fingers showed beginning atrophy. There was also an enlargement of the joint in one of the great toes, which made its appearance during the iodide of potassium treatment.

She was now put upon Fowler's solution, 4 minims after each meal, and after two months' steady treatment, although no improvement could be made out, she had not grown worse, and this was deemed of sufficient encouragement to continue the remedy in somewhat increased doses.

When, at the end of two more months, the patient presented herself again, a slight improvement in the enlargement of the third phalangeal joints, especially of one hand, was thought to be noticeable, and the patient herself felt well convinced thereof, so she was advised to continue the treatment, with occasional intermissions, as the arsenic had upon several occasions produced a little puffiness of the lower eyelids. I did not see her again until over a year later, when she brought me another patient of the same class, at the same time showing me her hands, upon which no trace of the arthritic process could be discovered. She had taken the arsenic for six months longer, and then discontinued it, having only a very slight enlargement left in two or three joints, which disappeared afterwards without treatment. The toe, she said, had also got well.

This second patient had been under the care of many doctors, and her case dated back some six years; but she had never taken arsenic. No cause was assigned by her. She had had rather poor health for many years, suffering from dyspeptic troubles, and her present deformity made her very miserable, on account of the restricted use of her hands, and particularly on account of their unsightly appearance. She had just returned from a visit to the Hot Springs of Arkansas, and said that she had grown much worse under the treatment there.

Without going into further details of this case, I will simply say that she was put upon arsenic, and that although not entirely cured the patient has been greatly benefited in the course of a year. She is able to use her hands almost as well as she ever could, and her general health has been much improved, owing to the simultaneous relief of her dyspepsia. The articular enlargements are certainly diminished by one-half, and the contractures are yielding to a steady course of massage and manipulation. She is still under treatment.

In connection with these cases I would like to call attention to the etiological factor in arthritis deformans, especially in the first case; here the theory of a central cause situated in the nervous system finds good support. The development of the disease after nursing, and the death of a near and very dear relative, with the attending anxiety and grief, the symmetrical development and progress of the case, the trophic disturbances, all point in that direction; and I believe this theory to be further confirmed by the results obtained from arsenic, which, in my opinion, produces its therapeutic effects always by its action upon the nerves and nerve-centres.

Pharmacological Contributions from the University of Pennsylvania.

THE PHYSIOLOGICAL ACTION OF USTILAGO MAIDIS ON THE NERVOUS SYSTEM.

By James Mitchell, M.D., Lancaster, Pa.

THE knowledge which we possess of the ustilago maidis is so very meagre that I have not been able to find any detailed account of its physiological action. It formerly received a brief notice from the German profession, but has never excited much interest until within recent date. By the above profession it is stated to possess abortifacient powers. We find mention made of the drug in Dr. H. C. Wood's Therapeutics for 1880 under the head of oxytocics, where it is stated "to appear to have active medicinal properties, and to have been used successfully in uterine inertia during labor by Dujardin-Beaumetz." Its more extended use of late seems to me to warrant a close study of its physiological action. Therefore, in accordance with the title of this paper, I have endeavored to ascertain, by means of an experimental research made in the Physiological Laboratory of the University of Pennsylvania, what action, if any, the drug possessed upon the nervous system. The animals used in my experiments were frogs. The plan which I pursued was to consider first the general action of the drug, and then any special action it might have upon the nervous system.

General Action.—The first effect witnessed after the injection of ten or fifteen minims of the fluid extract into the posterior lymph-sac of normal frogs was profound narcosis. The batrachian appeared greatly depressed, and

would remain motionless. The respiratory movements as a rule became rapid and irregular, at other times they were almost imperceptible. During the first stage of the poisoning voluntary movement was maintained. A semi-comatose condition, which was so marked in the early stage of the poisoning, was often succeeded by a short period of excitement, during which the batrachian would make frequent changes of position. This was quickly followed by great diminution of voluntary movement, succeeded by muscular tremors and clonic spasms. The muscular irritability appeared to be greatly increased. All the above symptoms then terminated in paralysis. At one stage of the poisoning anæsthesia of the surface became marked, and the animal would submit to pinching or burning without moving, though it was evident that the power of voluntary movement was not lost, from the fact of its occurring after the removal of the stimuli. If the dose was insufficient to produce death, all the above symptoms abated, the paralysis disappeared, and in the course of from one to two hours the animal appeared to have regained its normal condition. After one of my experiments the frog was observed for five days, and appeared during that time perfectly normal, proving, I think, the temporary effect of the drug.

With full toxic doses (20 to 25 minims) the above symptoms were greatly intensified. Coma and stupor were marked. The respiratory movements became very irregular. Great muscular weakness and relaxation followed, after which the muscular tremors, and, in the majority of cases, the clonic spasms, ensued, followed by paralysis and death. The pupils were contracted. The cutaneous anæsthesia was developed very early in the poisoning.

The immediate cause of death is, I think, due to a paralytic arrest of the respiration, since I found that the heart was beating rhythmically after all external signs of life had ceased. It has also continued to beat for one hour after the thorax was opened. The only exceptions to the above statement were noticed in two of my experiments, where the heart was found arrested in diastole. In one experiment it began beating feebly when mechanically stimulated, while in another experiment the auricles would contract, but not the ventricles. I also noticed that when five or six drops of the fluid extract were placed upon the exposed heart its movement would be arrested for a moment, though it quickly began beating again with slower rhythm. The coma and stupor, with the marked anæsthesia of the skin, would indicate that the drug possesses certain narcotic or analgesic principles. It is also evident that the action of the drug is essentially of a paralytic nature, the paralysis in all cases being much more marked than the spasms. With very large doses of 30 minims the animal sank down almost immediately paralyzed, with only a few muscular twitchings. All voluntary movement and reflex action were abolished. The pupils contracted, and in a very short time the irregular respiratory movements ceased. Death in these cases also appeared to be due to failure of the respiration, since the heart was found beating.

Special Action.—It is evident, I think, from the above results, that the most characteristic effect of the drug is one of paralysis. The question, therefore, naturally arises, To what is this paralysis due? To ascertain this I made three sets of experiments upon reflex action, in all of which experiments the frog was pithed, so as to eliminate voluntary movement, and, at the same time, any action of the drug upon the hypothetical inhibitory centres of Setschenow in the medulla oblongata.

In my first series of experiments upon reflex action I observed that it was slowly and gradually diminished with small doses, until a period was reached when it suddenly ceased. The time required to produce this effect varied, and was also dependent upon the size of the dose. With large doses—of 25 or 30 minims—reflex action was abolished in from six to eight minutes; while small doses—of from 10 to 15 minims—required from thirty minutes to one hour and thirty minutes.

A brief description of the manner in which my experiments were conducted will, I think, be of value. The frog was first pithed, and allowed to remain in a dish of water until the shock of the operation had passed off. It was then suspended carefully by a wire through the lower jaw, and reflex action tested at regular intervals by immersing the posterior extremities in a two per cent. solution of sulphuric acid; the time from the contact of the toes with the dilute acid and a contraction of the limb being carefully noted, since this would indicate a normal reflex. After each test the frog's legs were carefully washed of the acid solution by a gentle stream of water, so that the sensory nerves of the skin might not be affected by the prolonged local action of the acid.

Two experiments were made expressly with large doses of the fluid extract of ustilago maidis, so that it might be proven conclusively that the diminution and final abolition of all reflex phenomena were due to the direct action of the drug, and not to any local action of the dilute acid upon the skin. And that this is the case is, I think, proven from the fact that, though reflex action was strong before giving the poison, after giving these large toxic doses it was abolished in from six to eight minutes.

The fact that ustilago maidis diminishes and finally abolishes all reflex action is abundantly proven, I think, by my experiments, the details of which I omit for lack of space. The question therefore arises, To what is this loss of reflex activity due? It is evident that the suspension of reflex action can only be produced in three ways,—by paralysis of the spinal cord, of the nerve-trunks or peripheries, or of the muscles, or to two or more of these causes combined. I will, therefore, consider the action of the drug upon these parts of the system in inverse order.

That the loss of reflex activity is not due to a paralysis of the muscular system is clearly shown in the second series of experiments which were made upon reflex action. I have observed in them that long after the strongest secondary current from a single-gravity cell and a DuBois Reymond's induction coil had failed to elicit the slightest reflex movement, when a mixed nerve (sciatic) was stimulated, the tributary muscles contracted strongly; and later, when the efferent nerve had failed to conduct the impulses to the muscles, strong contractions could still be induced by the direct application of the electrodes to the muscle. This clearly proves that the muscular irritability was still maintained.

Since reflex paralysis, which was so marked in the former experiments, is not due to a paralysis of the muscles, it must be due to a paralysis of some part of the nervous apparatus.

That the loss of reflex action is not due to a paresis of the motor nerves or peripheries is evident from what has been said in the paragraph before the last. Furthermore, other experiments clearly prove the above statement. For I have seen that though the direct stimulation of a mixed nerve (sciatic) with the induced current would produce violent contractions in its tributary muscles, not the slightest reflex tremor could be induced. That the motor nerves are, however, ultimately depressed, and finally paralyzed, has also been ascertained by using definite strengths of the electrical current; it having been found that to produce these muscular contractions a gradual increase in the strength of the current was necessary, and that very late in the poisoning the strongest current failed to elicit the slightest response, though the muscles would still contract when directly stimulated. The experiments from which the above conclusions were derived were conducted in the following manner: The frog was first pithed and the left sciatic nerve exposed. The animal was then allowed to remain in water until the shock had passed off; after which the nerve was stimulated by an interrupted current obtained from a gravity cell and a DuBois Reymond induction-coil. The number of centimetres the secondary coil was removed from the primary in order to obtain just sufficient strength of current to produce a reflex movement was then carefully noted. The drug was then injected into the posterior lymph-sac, and the above test again repeated at intervals of ten minutes or more, the nerve being always stimulated at the same point.

Since it is abundantly proven that reflex paralysis is produced before the motor nerve-fibres and the muscles have lost their irritability, the question arises, whether the paralysis be spinal or due to a paralysis of the sensory nerves? That the loss of reflex action is not due to a primary paralysis of the afferent nerves seems indicated by the fact that if all the blood-vessels going to the posterior extremity of a frog were ligated, so as to prevent all access of poison to the limb, reflex action would be abolished in the protected limb *pari passu* with the unprotected leg; indicating, I think, that the failure of reflex movements in the unpoisoned limb must have been due to the direct action of the drug upon the cord. Further, by applying the interrupted faradic current to the exposed spinal cord in the dorsal region of poisoned animals strong contractions were induced in the posterior extremities, while no movements were produced in the anterior extremities, certainly showing that the failure of the cord to convey impulses upwards must have been due to a paralysis of its sensory (receptive) portion, while the motor portion must have been still capable of conducting impulses, as was evident by the contractions of the posterior extremities. That the motor portion of the cord is ultimately depressed is also indicated by the fact that the electrical current has to be gradually increased to cause these muscu-

lar contractions. It is obvious, therefore, that the seat of reflex paralysis lies in the sensory (receptive) portion of the cord. I would, therefore, conclude from my experiments on reflex action, that the ustilago maidis diminishes and finally abolishes all reflex movement by a paralysis of the sensory (receptive) portion of the cord; also that the motor portion of the cord and the motor nerves are ultimately depressed, as ascertained by definite strengths of the electrical current.

Whether the peripheries of the sensory nerves are affected or not early in the poisoning I have not been able to decide, on account of the early depression of the sensory portion of the cord.

The experiments from which the above conclusions were derived were made as follows: The frog was first pithed, and all the tissues of the left posterior leg, except the nerve, were then ligated, so that all access of the poison to the limb might be prevented. The frog was then allowed to recover from the shock; after which reflex action was tested by immersing the posterior extremities in a two per cent. solution of sulphuric acid. The frog's legs were carefully washed of the acid solution by a gentle stream of water after each test. After reflex action had ceased, the cord was exposed in the dorsal region, and stimulated directly by the electric current from a single-gravity cell and DuBois Reymond induction-coil.

The course of the paralysis having been ascertained from the preceding experiments, the question presents itself: To what are the convulsions, which were noticed in the above experiments, due? I may here add that my results have not been at all conclusive upon this subject, owing partly to the fact that at this time of the year (November) the frogs are in poor condition, and also to the fact that the paralytic phenomena were at all times predominant. That the convulsions are not of cerebral origin is proven by direct experiment, they having been observed in pithed as well as in normal frogs. It was also observed that they occurred in the posterior extremities after the cord was bisected in the dorsal region. Whether they are of spinal or muscular origin I have not been able to decide from the experiments which I have made. I have, however, seen that in experiments where the nervous connection only was maintained in the left posterior limb no movements whatever occurred in that limb when they were occurring in the other parts of the body, while in another experiment, under precisely similar circumstances, active movement occurred in the protected limb. In other experiments, when the nervous connection of the limb was severed, precisely opposite results again occurred. That the drug may act primarily as an irritant to the muscular and nervous tissues seems probable.

The conclusions at which I arrived from my experiments are, that the ultimate action of the ustilago maidis upon the nervous system is that of a universal depressant, producing a diminution and final extinction of all reflex and volitional phenomena, with the early induction of narcotism. That the loss of reflex activity is due to the paralysis of the sensory (receptive) portion of the cord. That the motor portion of the cord is also depressed, as well as the motor nerves. That it is also probable that the sensory nerves share in the general paralysis.

That death is due to arrest of respiration, though in exceptional cases it may be due to the diastolic arrest of the heart.

The marked similarity between the action of this drug and that of potassium bromide is worthy of note, although in my experiments I have never observed voluntary movements occur after the suppression of reflex activity, which are so commonly observed in poisoning with the potassium bromide. Though the possibility of such movements is evident, from the fact that the motor portions of the cord and the efferent nerves remain sufficiently intact in the early stages of the poisoning to convey impulses after the complete paralysis of the sensory portion of the cord. That voluntary movements, or, at least, movements the impulses of which have their origin in the cerebral ganglia may occur, is readily conceivable. The fact that they do not occur is conclusive proof, I think, that the cerebral ganglia are early depressed in the poisoning, and finally paralyzed. This is further shown in the profound narcosis seen almost immediately after giving the poison.

In the early part of this paper it was stated that the ustilago maidis was classed with the oxytocics, and it has also been asserted to possess medicinal properties resembling those of ergot of rye. Without further discussion I will place in parallel columns a summary of the conclusions drawn from the results of the present research, with those conclusions arrived at by the different investigators on the action of ergot of rye and that of potassium bromide, which it so closely resembles in its physiological action on the nervous system.

USTILAGO MAIDIS.

Nervous system: Cerebrum consciousness in frogs lost.

Spinal cord: The sensory portion of the spinal cord is first paralyzed, the reflex paralysis being due to this cause. The motor portion of the cord, as well as the motor nerves, are also depressed, and ultimately paralyzed. That it is also probable that the sensory nerves share in the general paralysis.

POTASSIUM BROMIDE.

Cerebrum, spinal cord, and nerves: "The evidence is, I think, sufficient to prove that bromide of potassium affects all parts of the nervous system of the lower animals, but that the cerebrum, the motor tract of the cord, and the efferent nerves are the last portions to be affected; that the most sensitive to its action is the receptive portion of the cord, and next to this the peripheral ends of the afferent nerves." (H. C. Wood's Therapeutics, 1880, p. 325.)

ERGOT OF RYE.

"The above summary of the general symptoms caused by poisonous doses of ergot shows that the phenomena are mainly paralytic in nature." "It would seem that the nervous system must bear the brunt of the poison." "It is probable that the chief action of the drug is upon the nerve-centres." (H. C. Wood's Therapeutics, 1880, p. 543.)

RED SULPHUR SPRINGS, MONROE COUNTY, W. VA.

BY L. B. ANDERSON, M.D., NORFOLK, VA.

THOUGH I have been acquainted with the medicinal virtues of these waters for many years, I have visited the Springs only once, and then for a very brief period. I am now unacquainted with the owner or proprietor, and know not what are the facilities provided for reaching them, or for the accommodation of guests. When I visited them, some five years ago, I embarked on an ambulance drawn by two horses, in company with four passengers, at Lowell Station, Chesapeake and Ohio Railroad. The route was mountainous, picturesque, and fascinating. Emerging from a forest on a high mountain, we caught the first view of the Springs in a valley a mile or more to the south of us, and sweeping rapidly down the declivity, we were soon landed at the office of the spacious hotel on the eastern side of the valley.

The grounds occupy a valley running north and south, not over a hundred yards wide and a few hundred yards long. It is bounded on the east by a mountain, rising at an angle of say 40°, on the base of which are located the most commodious buildings. On the west rises another mountain, at an angle of 67°, high into the air, at the base of which sweeps a small creek, which affords fine facilities for sewerage. Bordering on that stream is the long western range of buildings, at the southern extremity of which are the springs, two in number, and slightly different in their composition. They are very neatly and substantially walled, and present a very attractive and enticing appearance. Standing in the long portico of the eastern hotel and looking westward, just in front stands the long row of western buildings, behind which rises the steep and lofty mountain, covered with trees and rich foliage. To the left are the springs very near by, and a hundred or two yards to the right is the abrupt termination of the western mountain, around which sweeps the valley creek to empty into quite a bold stream coming down the valley from the right and north, to hide itself behind the western mountain.

The accommodations, when I was there, were very satisfactory. Beef, bacon, fowls, milk, and butter of the very best quality were abundant, and vegetables of all kinds plentiful. The water is perfectly clear, sparkling with disengaging gases, and very cold. Though it is quite strong in sulphurous and saline taste, it is not as offensive as most other mineral waters, and, after their use for a day or two, no other water is desired. Most persons experience a peculiar exhilaration after drinking a free potation, somewhat akin to champagne. We are now prepared to enter into an analysis and examination of their medicinal qualities.

Many years ago Dr. William Burke, of this State, who resided at the Red Sulphur Springs, wrote the fullest account of what was then known of their qualities that I have ever seen. An analysis of the waters, which, though probably as accurate as the state of chemical knowledge at that period could secure, was evidently very imperfect, is given in his essay. The first is from Prof. Rogers, and is as follows:

"Gaseous contents in an imperial gallon:

Sulphuretted hydrogen	4.54
Carbonic acid	8.75
Nitrogen	4.25

Solid contents consisted of sulphate of sodium, lime and magnesia, carbonate of lime, and muriate of sodium. Besides these ingredients, the water contains, in considerable quantity, a peculiar organic substance, which, mingled with sulphur, is deposited on the sides of the spring, and seems to increase by a species of organic growth."

The next analysis was furnished by Dr. Hays, of Roxbury, Mass., and is, in brief, as follows:

"Fifty thousand grains, or about seven pints, of the water, when evaporated, left a solid residuum of 20.56 grains of a light yellowish matter, which, when subjected to a still higher temperature, was reduced to 17.55 grains. This residue contained

Silicious earthy matter, with traces of iron and alum	0.70
Sulphate of sodium	3.55
Sulphate of lime	4.50
Carbonate of magnesium	4.13
Sulphur combined with organic matter	7.20

This last peculiar sulphur compound has never been described, if, indeed, it has ever been met with. Out of contact with air it forms a permanent solution. In its decomposition ammonia is formed, and hydro-sulphuric acid is liberated; if heat be employed, sulphur is liberated. The gaseous constituents are,—

Carbonic acid	5.750
Nitrogen	6.916
Oxygen	1.201
Hydro-sulphuric acid gas	.397."

Dr. Burke gives the testimony of many who had tested the virtues of these waters on themselves and their patients, from which we extract the following:

"Dr. Scott, a distinguished physician of Kentucky, says, 'For three months my pulse had not been less than 100 strokes per minute in the morning and 110 in the afternoon. In three days after beginning the use of the water it was reduced to 70 in the morning and 80 in the evening, etc.'

"Dr. Henry Hunt, of Washington City, says, 'I was attacked with a slight hemorrhage from the lungs, attended with other symptoms, indicating a diseased state of those organs. On the evening of my arrival at the Springs I commenced the use of the water. I had evening exacerbations of fever, pulse 115, and night-sweats. In ten days my pulse was reduced to 78 in a minute. I could, by increasing or diminishing the quantity of water, act at will on my kidneys or bowels. It exerted the most soothing and soporific effect, and often gave quiet rest when potent anodynes had failed. I felt the good effects for months after leaving the Springs.'

"Dr. R. H. Bradford, of Virginia, says, 'The effect of this water in reducing the pulse is one of the numerous singular and powerful properties belonging to it. It lessens arterial action to such a degree that it seldom fails to remove fever, pain in the chest, and difficult breathing. It may be taken with greater advantage in pulmonary troubles than any other remedy I have ever seen used for them.'"

Cases are given in which bronchial and laryngeal troubles of grave character were entirely relieved, while severe cases of tubercular pulmonary infiltrations and abscess were greatly modified in their character and stayed in their progress.

My own observations of the remedial powers of the Red Sulphur waters began with a young man who had grown to the height of six feet five inches in nineteen years, whose physical force was so feeble that he scarcely developed vitality above that of a delicate vegetative existence. His lungs were weak, his muscles were slender and relaxed, his digestive powers were feeble, his pulse was frequent, and he presented all the more striking indications of incipient phthisis. He visited these Springs, and remained six months, during which time there was an entire renovation in his physical constitution, and his mental as well. From a spindling, emaciated, feeble, overgrown youth he became a robust, muscular, and vigorous man, weighing more than two hundred pounds, which weight he has retained through all the years of a college curriculum, and other draughts upon him, till this time, now many years.

I have prescribed these waters to patients laboring under advanced phthisis pulmonalis with decided comfort, and frequently a great modification of their most distressing symptoms, and that, too, when the water was used from bottles which were transported hundreds of miles.

While at the Springs I saw an intelligent lawyer from North Carolina, who informed me that five years before he had been so reduced by a harassing pulmonary trouble, attended with decided hectic, that he was compelled to relinquish his practice. He came to the Springs in such a feeble state that he feared he would not survive the trip. But he was so much benefited that he was enabled during the following winter to resume the lighter duties of his profession. He had made annual pilgrimages to the Springs, and at the time I saw him he had just paid his fifth visit. With each annual visit there was a marked improvement in all his symptoms, and he was then able to perform all the work needful, both in office and at the bar, to meet the requirements of an arduous calling. I

met there with a distinguished minister of the gospel who had a laryngeal trouble of such a character as to incapacitate him for public speaking. He had not used the waters more than ten days before he was entirely restored. I saw children who were brought there in an advanced and emaciated state of cholera infantum, who were said to have improved in twenty-four hours after reaching the Springs.

It is to be regretted that no recent analysis of the water has been made. Some one has conjectured that the "yellow, undefinable mass," which is formed by precipitation on exposing the waters to the influence of the air, contains iodine, on what ground I know not. But there seemed to be a settled conviction in the minds of those who had the best opportunities for knowing, that such is the case. Whatever be the constituents of these waters, there can be no question of their wonderful sanative powers in affections of the throat, larynx, trachea, bronchia, incipient tuberculosis of the lungs, and all the mucous tissues extending into the stomach, bowels, liver, kidneys, bladder, and uterus. Much of the benefit which they exert results no doubt from the promotion of the secretions, as Dr. Hunt informs us, from the liver, kidneys, and bowels. So soon as his liver and kidneys were brought into vigorous and healthful exercise, and the bowels were freely acted on, his pulse became slower and steadier, and all his symptoms were greatly improved. But one peculiar effect of the waters—that is, its soothing and soporific influence—cannot be accounted for by any known constituent; and yet there can be no question that this peculiar property is wonderfully promotive of its sanative effects. One of the chief sources of irritation in all chronic pulmonary troubles is the agitation of the inflamed tissues from frequent paroxysms of coughing. Another is the prolonged wakefulness produced by this source of trouble. The great difficulty which confronts the medical man in meeting these troublesome issues is, that such agents as are at his command, which are calculated to exert a soothing and soporific effect, are constipating and astringent, or debilitating to the digestive organs. In this water we have an agent which not only quiets the cough and soothes the local irritation, but produces sleep, promotes the secretions, and gives tone and energy to the digestive organs, upon the activity and integrity of which so much depends the reparative process. From this stand-point alone these waters are worthy of all commendation.

While I was at these Springs I was struck with the entire want of system manifested by those who were using the waters and mostly needed their potential effects. No doubt many used the waters most injudiciously, and hence failed to receive a moiety of the benefit they might otherwise have derived. And yet there were numbers there who, despite their indiscriminate use, were loud in their praises of their curative powers, and even resolved to make annual pilgrimages to these Springs. My own convictions are, that among all the valuable mineral springs of which the Virginias can boast, the Red Sulphur does and must ever stand pre-eminent. And for scorbutic troubles, whether in the glands, lungs, throat, or eyes, I believe that these waters are without an equal on the globe.

COCAINE AS AN ANÆSTHETIC IN CIRCUMCISION.

By John Madden, M.D., Ashland, Wis.

ON February 2 I circumcised a young man, æt. 28 years, possessing a very nervous temperament, using a four per cent. solution of the muriate of cocaine as an anæsthetic.

Four points, practically equidistant, were selected upon the line of the intended incision, the hypodermic needle inserted, and about one-fourth of a drachm of the solution was injected beneath the skin at each of these points. A piece of absorbent cotton was then saturated with the fluid, and placed in contact with the preputial mucous membrane.

Testing the sensibility of the parts from time to time, by pricking with a needle, in about twenty minutes the sense of feeling was almost entirely abolished. The foreskin was then drawn forward, held between the blades of a pair of dressing forceps, and quickly ablated with a knife. The patient declared that the operation gave him no pain nor sensation of any kind, excepting in one small place on the left side. I noticed, however, that the solution had filled the subcutaneous tissue beneath this place. The mucous membrane was next caught up, and quickly cut off with a pair of scissors. Its sensibility, though very much lessened, was not entirely destroyed, and the patient complained of some pain. The operation was completed by stitching the mucous membrane and integument together, the former growing more painful towards the end of the operation, while the latter preserved its anæsthesia.

No constitutional symptoms were observed from the absorption of the cocaine.

TAPEWORM ACCIDENTALLY REMOVED BY CHLOROFORM.

By W. H. Bentley, M.D., LL.D., Woodstock, Ky.

IN September, 1885, I had occasion to visit a friend in an adjoining county on non-professional business. As his wife was in ill health, he wrote me a request to bring some medicine. Accordingly, I took along my usual travelling outfit of drugs. At 10.30 P.M. one of my friend's tenants sent his son in great haste to request my immediate attendance. The young man stated that his mother had had chills for several weeks, that a physician had seen the case several times, had "stopped" the chills each time, but they had returned again. Lately, however, she had been using Ayer's ague cure. This, he said, was the first chill during two weeks, and that it had already lasted between two and three hours.

I hastened to the patient to find her gasping for breath, radial and temporal pulse imperceptible. Surface and extremities cold, and the entire person bathed in a profuse clammy sweat. There was evidently no time to be lost, so, calling for some sweet milk, I at once administered a drachm of chloroform in about an ounce of milk.

The patient began to rally almost immediately, and at the end of forty minutes from the ingestion of the chloroform the circulation appeared normal. I have often administered chloroform during the cold stage in intermittent fever, and I have never known any marked degree of fever to supervene, and this case was no exception to the rule.

At half-past eleven o'clock, a little over one hour from the administration of the chloroform, I gave her 2 grs. podophyllin, 5 grs. bicarb. sodium, and 10 grs. quinine sulph. in half a wineglass of water, directing an ounce of castor oil, with half ounce spts. turpentine, to be given on arising in the morning. The excitement and worry of the occasion kept the family awake so late that they did not arise until the sun was an hour or two high, so the oil and turpentine were not given until 8 A.M. at least. At eleven o'clock I called, preparatory to leaving for home. When I arrived I was told that the patient was "over the vessel." In a short time I was admitted. You may judge of my surprise when I examined the discharge and found a tapeworm thirty feet long.

This is not the first tapeworm which I have removed by means of chloroform, but it is my first *accidental* removal of one.

Hitherto I always gave the chloroform, and followed directly with a large dose of castor oil and a full dose of croton oil combined, supposing that the chloroform only stupefied the worm, but to my mind the details of this case tend to show that it actually kills the parasite. It was dead when passed, and appears from the statements of the patient to have been in a coil or knot, for she said it gave her intense pain.

Did the chloroform kill the worm, or did the podophyllin and quinine do it? Could it be possible that it died in consequence of the sickness of its hostess?

I once had an inveterate case of typhoid fever, lasting sixty-three days. The subject was a man, 35 years of age, and the case occurred within a few months after I began to practise medicine. When the patient began to recover, his convalescence was at first extremely tardy. After a few days he began to pass sections of tapeworm with his stools. This continued during several days, and then the head came away. The portions were in an advanced state of decay. I was then afraid to give a cathartic to clear the bowels, lest his diarrhœa might return, so I have since found that I left him exposed to real danger by leaving him so long in retention of the putrid mass.

I have often wondered whether in this case the tapeworm died from the effects of the disease, the medicines, or from starvation.

CHIONANTHUS VIRGINICA.

By John A. Henning, M.D., Garnett, Kansas.

THIS is a shrub or small tree growing along creeks or rivers, mostly in the Southern States. Leaves obovate, lower surface downy; flowers, loose panicles in early summer; petals about an inch long, and the fruit blue-purple, with a bloom; common name, *fringe-tree.* The bark of the root is the only part employed. It is made and used in the form of a fluid extract. Dr. Justice has found saponine in it, but the plant has not come into general use.

Having used the fluid extract of chionanthus extensively in my practice for the last ten years, I can speak from personal experience as to its therapeutic action.

To simply say that a good article of the fluid extract, given in doses of half to one fluidrachm two or three times per day, is an aperient, cholagogue, diuretic, and an alterative, would but imperfectly describe its physiological effect in the human system. Of course, we should and must know its therapeutic effect, but we also must know when and in what pathological condition the system is in before we can prescribe it rationally. Some writers have said heretofore that chionanthus is a specific in jaundice. Although I believe there are no specifics for any disease, my experience warrants me in saying that this remedy is one of the best in jaundice that I have ever prescribed. Chionanthus is indicated in all cases where there is a yellow, jaundiced condition of the skin. While it is but a feeble hepatic stimulant, I think it is one of the most reliable remedies in congestion of the portal circulation that we have. I have seen this verified in a large number of cases. It also seems to stimulate the lymphatic system, and to possess some diaphoretic and diuretic action.

If the liver is torpid, other hepatic stimulants should be used, such as podophyllin or leptandrin. The following prescription is the form in which I use this remedy:

℞ Ext. fld. chionanthi, ℥i;
Podophyllum, ℥i;
Potass. acetat., ℥ss;
Aquæ, q. s. ad. ℥iv. M.
Sig.—Teaspoonful every three to six hours.

In all jaundice condition this prescription has never failed me. However, other remedies may be indicated, as jaundice is but a symptom, not a disease, and many causes may produce it.

THE USE OF NITRITE OF AMYL IN THE SEVERE PAROXYSMS OF WHOOPING-COUGH.

By Dr. Morris J. Lewis, Philadelphia.

E. B., female; æt. 13 weeks; breast-fed; a well-formed, healthy baby; rather small, and weighing about nine and one-half pounds.

At the age of seven weeks, having just recovered from the effects of a perfectly normal vaccination, she contracted whooping-cough from her brother, whose case had been one of the lightest character, rendering the diagnosis impossible for over two weeks. The infant's cough for the first week was but slight; but during the second week it began to show the characteristic symptoms.

The child was placed upon a mixture of belladonna and alum every three hours, and progressed favorably until the night of February 12, towards the end of the second week of the disease; it was then seized with a violent paroxysm of coughing, became purple in the face, and finally, according to the mother's statement, ceased to breathe. I was immediately sent for; but before I could answer the summons the mother had thrust the child out of the window into the cool, damp air of a foggy night. This procedure was immediately followed by an inspiratory effort, and the child breathed again. When I arrived the child was in an exhausted state, but was breathing regularly. After this, until the 22d of the month, but one other slight attack of this nature occurred. By this time the child was coughing in a perfectly typical manner. The medicine was continued, but in slightly larger doses, the child taking about the $\frac{1}{12}$ gr. of extract of belladonna in the twenty-four hours.

On the night of the 22d there were three severe paroxysms, during all of which I was present.

The child would awaken with a series of violent expiratory coughs, with scarcely an inspiratory effort between them. Finally, an expiratory spasm would occur, lasting fully fifteen seconds, during which the child would struggle and become perfectly livid. This would be succeeded by complete collapse, with entire suspension of respiration, due probably to exhaustion of the respiratory centre.

During the last two of these attacks I administered ether by inhalation, and believe that thereby the spasmodic stage was somewhat shortened, but the subsequent collapse was so severe that I was obliged to resort to artificial respiration, and once had to continue it for ten minutes, as during that time there were but one or two feeble attempts at inspiration. The evening before I had placed the child on the $\frac{1}{600}$ of a grain of sulphate of atropine every three hours.

Dr. William Pepper then saw the case with me in consultation, and suggested combining a small amount of nitrite of amyl with the ether to prevent if possible the stage of exhaustion. This combination seemed to have a good effect; but, as the amount of ether required seemed to render the child drowsy and disinclined to nurse, I gradually dimin-

ished the proportion of ether until the mixture contained one-fourth part of nitrite of amyl. This mixture was kept in a small vial, and with each cough the end of the finger was wetted with the mixture and held close to the child's nose and mouth, so as to catch the first inspiratory effort. Thus administered, the child practically got nothing but nitrite of amyl. After the commencement of this treatment the child never had another attack of exhaustion, and the severity and length of the paroxysms seemed to be materially lessened, although the child coughed just as frequently, the number averaging fifty in the twenty-four hours, the amyl being given each time.

No untoward effects were at any time noticed, even when once I held the bottle, containing at least 10 drops of amyl, to the child's nose.

It was difficult to judge of the amount of flushing produced by the drug, on account of the flushing caused by the cough.

This treatment was continued for two weeks or more, and during this time the sulphate of atropine was continued in doses averaging the $\frac{1}{100}$ of a grain every three hours.

I am confident of the beneficial effect of the nitrite of amyl in this case, and, although one swallow does not make a summer, I think the drug will be found of use in analogous cases; the tendency to apoplexies of various kinds, and some of the other complications, being also probably lessened thereby.

Dr. John M. Taylor, who assisted me in watching the case, is also positive of the good effect produced.

In the short time that I have had to look up the literature of the subject, I cannot find that nitrite of amyl has been used in whooping-cough, nor has anybody that I have spoken to on the subject known of its use.

By diluting the nitrite with ether or alcohol it can be administered in any dose required, and could more easily be placed in pearls than the pure nitrite.

By placing it in a bottle with a small top, that can be covered easily by the finger, it can be almost immediately administered by simply wetting the tip of the finger by inverting the bottle.

The child is now doing well, and has had no complication other than a slight umbilical hernia.

1218 WALNUT STREET.

YERBA SANTA AS A VEHICLE FOR QUININE.

MR. J. D. A. HARTZ proposes a preparation of yerba santa, in addition to those already on the market, for disguising the taste of quinine (*American Druggist*, March, 1886). One fluidrachm of this preparation is said to obliterate the taste of two grains of quinine.

The first step in preparing it is to exhaust twenty-five ounces of powdered yerba santa (the powdering can be easily accomplished in a drug-mill to a degree of fineness that sifting can be dispensed with) with a menstruum of one volume of alcohol and two volumes of water, regaining the alcohol by distillation, and reducing the remainder over a water-bath to twenty-five fluidounces. In the still, and also in the evaporating dish, will be a copious deposit of resin which seems unessential for the purpose, and is designedly separated, as an alcoholic fluid extract of yerba santa would produce an unsightly mixture.

The next step is the preparation of a syrup by intimately mixing in a mortar three hundred minims of oil of sweet orange with three ounces of finely powdered phosphate of lime, gradually adding three fluidounces of alcohol, and afterwards, also very gradually, eighty-five fluidounces of water. Transfer the mixture to a bottle, add one hundred and fifty minims of purified chloroform, and shake vigorously for half an hour, filter, and dissolve in the filtrate one hundred and forty ounces of sugar, add the fluid extract and enough water to make two hundred fluidounces.

POISONING BY VASELINE.

MR. H. S. ROBINSON states in the *British Medical Journal*, February 13, 1886, that he was summoned to see three children aged from 8 to 14 years, who had each been given about half a teaspoonful of vaseline on sugar the previous evening, as they suffered from sore throats. Soon afterwards, whilst in bed, they were all seized with pain in the knees and cramps in the lower extremities, together with severe vomiting, which continued for eight or nine hours. On visiting them the next morning the severity of the symptoms had passed off, although the eldest child was still inclined to vomit, and was in a somewhat collapsed state. There were no febrile symptoms, and they all quickly recovered their usual health. No other cause for these symptoms than the administration of vaseline could be discovered.

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Leading Articles.

HOPEINE.

THE remarkable discovery was announced about a year ago of a new alkaloid to which are due the narcotic properties generally attributed to hops. To this alkaloid the discoverers — Williamson and Springmuehl, of London, England—gave the uneuphonious name of hopeine, driven to this alternative, it would appear, by the circumstance that the names lupulin and humulin, which the ordinary practice in scientific nomenclature would have suggested, were preoccupied. In view of the fact that previous investigators had never found in this drug any such alkaloid, the announcement was received with some incredulity, but a ready explanation was forthcoming. The new alkaloid, it was stated, is contained in ordinary cultivated hops only in very minute quantities. In the wild American hop, however, it was said to be present in the proportion of fifteen parts in ten thousand, or about ten grains in a pound. It was stated, however, that in practice the yield was only three or four grains from a pound of the crude material.

The process by which the alkaloid was obtained was totally unlike any recognized process for extracting alkaloids. The hops were to be exhausted with a sixteen per cent. solution of glucose in water, with addition of acetic acid. The solution, after treatment with animal charcoal, was to be evaporated, to separate the glucose by crystallization (!). The residue was then to be treated with absolute alcohol to obtain the crude alkaloid. We are quite unable to conjecture why a solution of glucose should have been selected for the extraction of the alkaloid, unless it were to deter experimenters from attempting to verify the alleged discovery.

Specimens of the new alkaloid were transmitted by the discoverers to physicians for physiological and clinical experiment, and reports soon appeared, from which we learn that the action of hopeine closely resembles that of morphine, both qualitatively and quantitatively. It strikes one as a little singular that the first reports, which come respectively from Dr. W. T. Smith, of London, and from Dr. M. Roberts, of New York, should have been published in German, in a Berlin medical journal, the *Deutsche Medizinal Zeitung*. The physicians named would seem to be remarkably free from the itching for fame which generally prompts men who happen to be the first to have penetrated any of the secrets of nature to proclaim in the ears of all their neighbors their discovery. That these gentlemen, however, acted in perfect good faith in their respective communications to the (distant) public there is no reason to doubt.

It was not long after the discovery of hopeine was announced before it became known that the new alkaloid was in the market as the product of the London Concentrated Produce Company. It commanded, naturally, a high price, for it could only be made from wild hops imported from North America. The latest statement of the manufacturing company is that they employ the lupulin from *Arizona* hops as the source of the alkaloid. If this is true, we only wonder that they can afford to sell it at so low a price.

When we read, however, of the use of American wild hops, put up in pressed packages, we in America rub our eyes and wonder how it is that we are not better informed about matters here at home. We had always innocently supposed that pressed hops were obtained from the cultivated plant grown this side of the Mississippi.

The therapeutic action of hopeine agrees,

according to all observers, in nearly every particular with that of morphine. Williamson assigned to it, however, a different chemical formula, $C_{18}H_{20}NO_4 + H_2O$, that of morphine being $C_{17}H_{19}NO_3$. It is noticeable that the difference is so small that experiments must be conducted with the greatest care to make it certain that it is anything more than the result of errors of observation. Williamson has himself now admitted that there is also present in commercial hopeine a variable proportion of an alkaloid isomeric with morphine, to which he gives the name of isomorphine. This discovery, however, he seems to have made only after hopeine had been made the subject of critical examinations in France and Germany, and had been shown to agree in chemical behavior in every particular with morphine.

The facts, as they appear from the full report of Dr. Dujardin-Beaumetz, of Paris, are that the article sold as hopeine differs from morphine only in the circumstance that it has a hop-like odor and flavor, which, however, is easily removed by the simplest process of purification, showing that it had been intentionally introduced into or retained in the preparation. Some samples of the alkaloid, indeed, had a flavor of oil of wintergreen in place of that of hops. Dr. Dujardin-Beaumetz is driven by the logic of the facts as revealed in this investigation to conclude that either morphine is a constituent hitherto strangely overlooked in chemical examinations of hops, or else that the article sold as hopeine was in reality the product of papaver somniferum; in other words, ordinary morphine commanding, under a fictitious name, ten times its legitimate price.

The profession is to be congratulated on the failure of what we cannot regard otherwise than as an infamous attempt at a wholesale fraud. There is food for thought in the fact that such a scheme, based upon the assumption that physicians were too little familiar with the scientific facts of chemistry to discover even so barefaced an imposition, was so nearly successful. On the authority of Dr. Hoffman we are assured that prominent medical men in New York have become identified unwittingly with a still more outrageous scheme, if it is true that kaskine is, as the doctor avers, nothing but saccharum album. We believe it is the physician's own fault if he is thus victimized. He has allowed his mind to become confused with regard to his relations to the art of pharmacy. To the pharmacist he has properly relegated the details of the processes by which his own purposes with regard to the use of remedies can be carried out. He should not expect the pharmacist to go beyond this sphere, and offer to him new combinations and new remedies, unless it be done in the way of modest suggestion. In fact, the pharmacist is now urging upon him, under one specious pretence or another, a class of preparations which are no whit better than the secret nostrums commonly known as patent medicines. If the physician has so little independence as to accept these ready-made prescriptions, whose composition is either wholly concealed or only vaguely shadowed, and generally falsified, in their alleged formulæ, he must expect that men who are unscrupulous about the means of acquiring riches will take every advantage of him; and he will have the mortification to find before long that his profession is selected by sharpers as the most favorable field for confidence operations.

HOW CLINICIANS ARE TRAPPED.

A CURIOUS phase in pharmaceutical history is the alterations which from time to time occur in drugs without change of the commercial name. It is a very odd commentary upon surgical therapeutics that, in the course of one or two decades, an entirely different drug should be substituted for the old pareira brava without the surgeons ever suspecting the alteration. A similar substitution occurred in the case of creasote. As the products of coal tar became cheaper and cheaper, carbolic acid little by little replaced creasote, so that there was a time when there was no creasote at all in the market, the article which was everywhere sold under such name being nothing more or less than impure carbolic acid. Finally, some astute observer discovered the substitution, and pointed out that the two products could be readily distinguished one from the other by their odor, creasote having the peculiar smell of smoke. This led to the discovery by many dentists of the great superiority of creasote over carbolic acid as a nerve-obtunder. So long, however, as these gentlemen were not told of the differences of the drugs they never detected the substitution by their clinical results. In regard to pareira brava, it would probably be a shrewd guess if we would consider that the activity of the decoction depends upon the water which is present, and that, as the surgeons use the same water with the roots of

Cissampelos pareira and Chondodendron tomentosum, the effect was identical with those, or, in other words, that the water is the most potent part of the two decoctions. Creasote and carbolic acid are undoubtedly very active agents, but their physiological activity seems to run in identical channels.

A recently discovered substitution has resulted in much, if not all, of the caffeine in the markets being theine. The alkaloids theine and caffeine have long been supposed to be identical by chemists and physiologists, but the recent researches of Dr. Mays indicate very strongly that these two alkaloids are not the same thing. Damaged tea-leaves exist in commerce in such large quantities, and can be purchased at such low rates, that manufacturers have been using them very largely for the production of the alkaloid. The medical practitioner prescribes by name, so that the demand has been for caffeine rather than for theine, and the pharmacists have largely supplied theine when the doctor wrote for caffeine. This substitution has not been detected by the general clinician, an argument, of course, for the belief in the identity of the two alkaloids,—an argument which, however, may rest upon the lack of observation on the part of the clinician. Readers of the GAZETTE will remember that some time ago we called attention to different results which we had obtained from the use of different makes of caffeine, and detailed a case in which caffeine, as sold by one of our most reliable druggists, failed to do good, although the caffeine prepared by Merck was successful. The trial in this case was made several times with similar response. According to the *American Druggist*, Merck's caffeine is sometimes caffeine and sometimes theine, but it is possible that the samples of Merck's caffeine which we used in this case happened to be pure caffeine.

In 1840, Martins asserted that guaranine is identical with caffeine, and his verdict has been generally accepted ever since. It is probable that the manufacturer, as he labels theine caffeine, also labels caffeine or theine guaranine when the call is for guaranine. This is all wrong. Guaranine should be prepared from guarana, theine from tea, and caffeine from coffee, and the price for each alkaloid be fixed according to its cost. We are rapidly learning the lesson that pharmaceutical chemistry, as well as practical therapeutics, must be continually unlearned as well as learned. It has not been long since we all believed that the chemists had proved that the alkaloid of hyoscyamus was identical with atropine. Now, we know that there are at least two alkaloids in hyoscyamus, neither of which is atropine. By all means, then, let us have honest labels as well as fair prices, and not call a product something which it is not, although the chemistry of the day says it is the same thing as that which it is not.

MATERIA MEDICA IN MEDICAL COLLEGES.

IF there be one branch of medicine more than another that is a bugbear to medical students, it is materia medica. The facts of this branch of knowledge, for it is not a science, constitute an immense mass of disjointed, disconnected information. Heap upon heap to be swallowed, digested, formed into the brain-tissue of the unfortunate student for use on examination-day, most of it to be ejected the next week upon the ever-growing waste-heap of useless knowledge, very little of it having any practical importance to its possessor in after-life.

In the more advanced American colleges the uselessness of the details of materia medica proper is beginning to be appreciated by teachers, but in England it would seem that the old-fashioned notions still prevail, so that it is still believed that a doctor must be at the same time an apothecary. In our opinion he might as well be expected to be a surgical instrument maker. What value is it to the physician to know that the extract of Calabar bean comes from a plant that rejoices in the name of physostigma venenosum? The practical medical fact is as to the effect the extract has on the human organism when put into it. Why should a man be expected to know that cupræ bark comes from certain plants belonging to the genus Remijia, growing in Brazil? Knowledge of the physiological and therapeutical effects of quinine, and not of its natural history, add keenness to the blade with which the doctor fights disease.

The knowledge that the world possesses grows enormously. The number of facts comprised in the sum total of human acquirement is probably many hundredfold more than fifty years ago. Every decade adds enormously to the number of points which have to be covered in the study of medicine. Each year it becomes more and more necessary to cut out unessential matter. The apothecary was specialized from the physician to perform a definite task, and if the doctor is expected

to know the apothecary's business, the apothecary might as well cease to exist.

We have been led to these remarks by looking over a skilfully put together little book, which has been prepared by Dr. Prosser James, of London, as "A Guide to the British Pharmacopœia of 1885," to assist the students in fitting themselves for the examinations required in the various English colleges. With the spirit of the preface of this book we agree entirely. Dr. James says,—

"The cry for restricting the area of examinations is unheeded, and occasionally examiners pelt students with materials which they employ for no other purpose. Such highly-developed boys have lost all respect for the opinion of frogs."

We are sorry for the frogs, and still more sorry for those who are served by the physicians into which the frogs are to be transformed. For you cannot get more than a pint into a pint measure, and if the young brain is overloaded with matter of little importance it will be underloaded with that which is valuable. Materia medica courses, except of the most elementary character, are, in our opinion, out of date in medical colleges, and as despicable as cast-off mediæval armor. Elaborate, profound study of the physiological action of medicines and of their therapeutic application is the food upon which the student frog should be nurtured through the medical developmental stage.

THE REACTION OF THE GASTRIC SECRETION AND ITS RELATION TO CHOLERA INFECTION.

THE controversy between Koch and Klein as to the etiology of cholera has again been opened through the publication of a paper with the above title in the *Brit. Med. Journal*, March 13, 1886, by Dr. Matthew Hay. It will be remembered that Koch attributed the cause of cholera to the comma-shaped bacillus which obtained access to the system solely through the alimentary canal; and that, further, the vitality, and therefore the virulence, of this comma-bacillus was destroyed by an acid. The principal objection which Klein offers to this view, as to the etiology of cholera, rests upon the facts that, if the comma-shaped bacillus is the cholera virus, and the alimentary canal is the sole entrance of the cholera virus, then the other proposition, that the cholera bacillus is destroyed by acid, must fall to the ground. For, claims Dr. Klein, the reaction of the stomach is always acid. Therefore either one or the other of these propositions must be false,—either that the bacillus is destroyed by an acid, or that it is the cause of cholera, and its entrance is solely through the alimentary canal. Now, it has been well proved that an acid does destroy this bacillus, and therefore Klein concludes that the other propositions must be false. It is at once seen, however, that Klein's argument is based on false premises; for it is by no means necessary to assume, as does Koch, that the stomach must have been previously so deranged that its contents and secretions are not acid, since it is known to nearly every one that the reaction of the stomach, except through the periods of digestion, is not acid, but is alkaline; therefore the principal objection which Klein urges against Koch's theory falls to the ground. This fact as to the reaction of the contents of the stomach has been again brought into prominence through the paper of Dr. Hay above alluded to, and in which he again has experimentally demonstrated that the reaction of the stomach in fasting, after the administration of various neutral salines, or even after the ingestion of water, had invariably an alkaline reaction. His experiments on the ingestion of water are of special importance, since he found that in animals (the cat) the reaction of the stomach when empty, or when filled only with water, is alkaline; that the inference from this fact that a similar state of affairs will hold in the case of man is supported by the fact determined by Ewald, that when water was introduced into the stomach of the fasting man the contents of the stomach had a neutral or alkaline reaction so long as it remained in the stomach. This he ascertained by removing portions of the water from time to time by means of a stomach-tube. The practical application of these facts to the bacillus theory of cholera is very evident; for, it being acknowledged that the bacilli will be destroyed by an acid, if they are swallowed when the stomach contains food, they run the chance of being destroyed by the acid of the gastric contents. If, on the other hand, they be swallowed in water, as it is believed ordinarily to be the case, and the stomach be previously empty, then the bacilli will pass through the stomach into the intestines, where, according to Koch, they find a suitable nidus for their development. The same will happen if they be swallowed in saline solutions, as mineral waters, etc. It is evident, then, that if we accept this theory as

to the cause of cholera, it is only necessary for its prevention to keep the stomach constantly acid, and this will, of course, be attainable by keeping the stomach constantly in a state of activity; for, as long as food remains in the stomach, the reaction of the stomach must be acid. Consequently, the frequent ingestion of food in small amounts may possibly serve, by keeping the stomach acid, to prevent the passage of the bacilli. It is, of course, to be remembered that after the long fast of the night the reaction of the stomach will in all probability be alkaline, or, at any rate, neutral, and then, since it is claimed that the principal means of introduction of bacilli is in drinking-water, one should carefully avoid drinking water after a long fast, except some solid food be previously taken, and drinking water should especially be avoided before breakfast. As mentioned by Dr. Hay, it is a prevalent belief among the laity that one should not venture with an empty stomach in the neighborhood of infectious cases, and it would now appear as if this belief were about to receive some scientific support.

WINTER-TIRE.

IT is a curious fact that the farther north we travel the hotter habitually are the interiors of the houses. At first thought it would seem natural that the temperature in which the person lives in the house should approach more closely that of the external air, but a little consideration shows the reasonableness of the habitual action of northern nations. The man who is exposed all day to a low temperature must produce an enormous amount of caloric in order to meet the demand and keep his body warm. At eventide he naturally seeks rest, not only for wearied mind and muscle, but also for the heat-producing function. It is not always remembered that energy is expended in maintaining bodily temperature, and that when an excessive amount of such energy is required, excessive exhaustion follows. The habitual excessive draught of the winter-time upon heat production is probably one of the reasons that in the early spring every one feels so relaxed and depressed. Of course, the general relaxation and lack of energy which has received the popular name of spring-fever, and which is supposed by many to be moral rather than physical, is due in part to the fact that the winter is, at least to many brain-workers and denizens of cities, the period of excessive toil. Nevertheless, it should be called winter-tire rather than spring-fever.

This relaxation of the system shows itself not only by the production of laziness, but also in manifestations of distinct disease. A good deal has been written in the course of the last decade concerning the fact that in children chorea is so much more frequent in the spring than at other times, but our own experience is that in this respect chorea does not stand alone among nervous diseases. Neurasthenic conditions, hysteria, and all the minor or functional nervous ills which are connected with lowered nerve tone have come under our notice as a regular spring crop, and we think most neurologists will find that the months of April and May are those of greatest professional activity.

PEPTONE SOUPS.

THE knowledge of the functions and chemical processes of the single digestive organs, as established within the last decade, has gradually led to the artificial reproduction in the laboratory of the digestive procedures, and to the preparation of the same digestion products as are formed in the economy. The intention not only to aid the weakened functions of the digestive apparatus, but also to procure a rest for the affected organ, and to protect it against mechanical irritation, gave birth in the first place to the preparation of a number of highly digestible articles of diet, and recently also to the practice of introducing into the alimentary canal artificially digested food-stuffs. Among these artificial digestion products the first rank is justly claimed for the artificially digested, peptonized albuminates, not only because they are indispensable for the support of the organism, but also because the assimilation of albuminates calls for the greatest activity of the alimentary organs.

There are at present very many artificially digested albuminates, so-called peptonized preparations, in the market. Unfortunately, nearly all have the disadvantage of a more or less unpleasant odor or taste, or, again, are of such a high price, that their prolonged use meets with serious objections on the part of the patients. The unpleasant odor and taste of these peptonized preparations in many cases originate from nothing less than a decomposition of the peptone, which substance is very hard to be preserved, or from prolonging the stage of digestion so far that numerous aro-

matic bye-products, such as cindal, make their appearance. Such a preparation, brought into the digestive apparatus, would of course only increase the existing trouble by intensifying the possibly already existing fermentation processes, and by inducing an elevation of animal temperature in consequence of absorbed decomposing matter. This may be especially the case with the enemata of pancreas peptones which are occasionally ordered in febrile affections. Leube-Rosenthal's meat solution, which is free from these objections, cannot be ranked with the peptonized preparations at all, on account of its scanty contents of peptone, but must be classed with the meat preparations. Dr. Jarvorski's peptone soup and a number of peptonized preparations, recently placed in the market by a reliable American firm, appear to unite all the advantages of peptonized articles, and to lack at the same time the above-mentioned objections. Jarvorski is favorably known to the readers of the GAZETTE by a number of valuable contributions to medical literature, especially by his essay on the effects of a Karlsbad cure. He claims to have used peptonized soup for the last six years, both in hospitals and in private practice, with the best results, without ever witnessing any undesirable after-effect, such as diarrhœa, which has been occasionally noted to follow the use of inferior preparations. This soup —intended for one day's ingestion—is prepared from 500 grammes (1 lb.) of the best beef, finely scraped, free from bone, fat, and sinew; to this is added 1 kilogramme (2 lbs.) of ordinary fresh meat. A quantitative chemical analysis of this soup* gives the following results: Syntonine, 7.3 grammes; propeptone, 33.0 grammes; peptone, 40.0 grammes. In all we have, therefore, 80.3 grammes of dissolved albuminous matter. The soup is, of course, to be warmed for each meal. It is claimed that a lost appetite can be recalled after a few days' use of this soup, and that previously existing gastric pains disappear equally soon. The soup may also be employed as an enema, and may then receive additional special medication.

The peptonized nutrition is indicated in all affections in which it is desirable to raise a weakened nutrition; there exists actually no contraindication for its use. The principal indications are diminished secretion of the digestive organs in febrile conditions, in perityphlitis caused by inveterate intestinal catarrhs with accompanying catarrhal intestinal ulceration, in gastric catarrh, hæmatemesis, anæmia and chlorosis, intestinal stenosis, gastric ulcer, carcinoma, cardialgia without emesis, and finally in convalescence after febrile affections.

The peptonized articles experience a thorough assimilation, and by themselves form a sufficient nutrition for a long time, which is proven by the increase of bodily weight under their use. This important fact is vouched for by the researches of numerous observers, of whom we mention Plosz, Catillon, Raymond, and Adamkiewicz.

It is to be hoped that the peptonized soup and other reliable peptonized articles will soon gain the same and well-deserved popularity in this country which they enjoy abroad, especially in Germany.

* Abstracted from the *Zeitschrift für Analytische Chemie*, vol. xx. p. 316.

OFFICIAL REPORT ON THE CHOLERA EPIDEMIC IN FRANCE IN 1884.

THE general results and practical lessons to be drawn from the official report on the great epidemic of cholera ravaging in Southern France in 1884 cannot fail to elicit an earnest interest throughout the world. In the *Bulletin de l'Académie de Médecine* and the *Centralblatt für die Med. Wiss.*, of February 13, 1886, we find the report of Marey, based on the conclusion of the cholera commission, consisting of Pasteur and nine other prominent French physicians. One hundred and thirty-three interrogation blanks were sent to the various districts in which the epidemic reigned, one hundred and four of which, after their return, were regarded as useless for the purposes of the commission and discarded. It would lead too far to enter here into the details of the commissioners' work, and we shall content ourselves with representing the most vital conclusions arrived at, as follows:

1. In all those districts of France from which answers were obtained from resident physicians, the cholera appears to have been introduced into the single towns from previously infected places; for in three-fourths of all instances considered this mode of propagation was proven, while for the remaining one-fourth it was regarded as highly probable.

2. Considering only the observations as contained in the returned reports, the cholera is to be regarded as infecting more intensely the smaller towns than the more populous

centres. It is consequently a serious mistake, during a threatening or actually existing epidemic, to flee from the larger towns to country-places.

3. General uncleanliness, and the abominable habit of certain classes of people to throw around the human dejections everywhere, is the chief agent of the dissemination of the disease, for during an epidemic the dejections of a person who shows no other morbid symptom than a slight diarrhœa, may contain the causes (*les principes*) of a most serious cholera.

4. The cholera is often propagated by means of water contaminated with the excrements of cholera patients.

5. Stormy and rainy weather is often observed to either precede an outbreak of cholera or intensify its severity. This refers to the contamination of the drinking-water, caused by the dirt being first dissolved, and subsequently carried away into the various reservoirs of drinking-water.

6. And, as in the larger towns the drinking-water is better guarded and protected than in smaller places, the cholera finds a greater field of propagation in the latter. Some cities, however, which derive their water from brooks, lose the above advantage.

7. In every locality such quarters are most dangerous during an epidemic which lie on low grounds in the neighborhood of the water channels.

8. The disinfection of houses inhabited by infected persons, of excrement, of clothing, and of other suspected articles, is to be conducted strictly according to the instruction of the Comité Consultative d'Hygiène, and is as such an indispensable procedure. It appears as if by this measure the epidemic has been suppressed in its initiatory phase in several instances. But, in order to be thoroughly effective, this disinfection is to be executed with the greatest conscientiousness on the part of physicians, for the appearance of the first pronounced cases, even if belonging only to the light choleriform affections, may propagate the disease by contamination of the water.

9. Old and weak people and small children are most predisposed to the cholera infection, though alcoholic indulgence, general and personal uncleanliness, are likewise to be regarded as strongly predisposing agents.

10. One attack appears to confer no immunity upon a person, not even for a short time, as during an epidemic of a short duration several relapses were observed.

Reports on Therapeutic Progress.

ON NEW REMEDIES.

From the *Deutsche Medizinal Zeitung* of February 11, 1886, we abstract the following *résumé* of all such remedies as have been either recently discovered or presented to the profession in a novel form or combination. Though the majority of these drugs have been previously discussed in the GAZETTE, our readers will benefit from this condensed but comprehensive review, as prepared by MERCK, of Darmstadt.

1. *Absynthine.*—The bitter principle of artemisia absynthium, L. It is easily soluble in alcohol and chloroform, but sparingly so in ether, and almost insoluble in water.

This drug has been tried as a febrifuge, but without any definite results. Small doses stimulate, larger ones stupefy and produce emesis. Roux recommends absynthine in doses of 1½ to 3 grains twice daily, quarter of an hour before meal-time, against anorexia and constipation of chlorotic persons and convalescents. The drug is contraindicated in looseness of the bowels. Gelatin capsules are the choicest form of its administration.

2. *Acid. Sclerotinic.*, Podrogssotsky.—A light brown powder, which can be well preserved in a dry place.

This new preparation is therapeutically far superior to the old drug prepared after the method of Dragendorff. It produces uterine contractions, and seems also possessed of general hæmostatic properties. Doses of ½ grain applied hypodermically show a distinct effect, though for the majority of cases doses of 1½ grains will be found necessary. The indications of the drug coincide with those of secale cornutum.

3. *Acid. Chromic. Puriss.*—The chromic acid prepared at present presents almost perfect crystals, is nearly free from sulphuric acid, and is consequently but little hygroscopic.

4. *Apiol Alb. Cryst.* (parsley-camphor = $C_{12}H_{14}O_4$) is contained in the seed of petroselinum sativum, together with apüne and an ethereal oil. It forms white needles of a faint parsley odor, is insoluble in water, but readily soluble in alcohol and ether.

Doses of ½ to 1 dr. cause stupefaction. In doses of 3 grains it has been successfully employed against intermittent fever and dysmenorrhœa.

5. *Aseptol* ($C_6H_4.OH.SO_2.OH_2$.).—Thirty-three and one-third per cent. solution of orthoxyphenol sulphonic acid,—a substitute for

phenol and salicylic acid, the antiseptic properties of which it represents. It is soluble in water, alcohol, and glycerin in every proportion. It lacks the irritating and toxic properties of carbolic acid.

Aseptol is recommended in extensive surgical operations, on account of its harmless nature. It does not destroy, like other antiseptic drugs, the finer tissues, and may consequently be advantageously employed in surgical ophthalmology. Aseptol is still active in a solution of 1 to 1000. Internally, the drug may be used in doses approximating those of salicylic acid.

6. *Atropin. Sulph. Alb. Neutr. Cryst.*—A preparation absolutely pure, neutral, and free from daturine.

Merck regards the prejudice against the German preparation in favor of the English drug as totally unfounded, and makes the rather bold statement that England does not furnish any atropine at all, and that the so-called English atropine, which many physicians exclusively call for, is invariably a German preparation.

7. *Baryum Boro-Wolframic., Baryum Oleinic., or Sulphur. Pur.*—All the preparations of baryta are to be classified among the poisons, and are hence to be used with caution.

Kobert informs us that in England the drug is used as a substitute for digitalis to regulate cardiac action.

In America the preparations of baryta are used against syphilis and scrofulosis, and especially the sulphate in doses of 1½ grains, in the form of duodenal (keratine) pills.

In view of the rarity of poisoning with baryta it is difficult to fix the toxic dose of the drug. It is, however, known that the carbonate may kill adults in doses of 1 dr. As antidotes may be used apomorphine and the various soluble sulphates.

8. *Benzoylecgonin* ($C_9H_{14}NO_3 - C_7H_5O.$) is obtained as a secondary product in the preparation of cocaine; it is easily soluble in water, scantily so in alcohol, and insoluble in ether. The drug can be transformed into cocaine through methylization.

9. *Bismuth. Pepton. Sicc. Pulver.*—This preparation is thought to represent a rational form of administering the drug. It contains in 100 parts 3.1 parts of bismuth, or 3.5 parts of oxide of bismuth, in a soluble form. It is used against dyspepsia and gastralgia twice or three times daily in doses of 75 grains.

10. *Boldine.*—The preparation rapidly assumes a dark coloration when exposed to the light. It is obtained from an evergreen plant of South America, and is said to be useful as a tonic in hepatic affections and biliary calculi. The alkaloid boldine is besides used as an hypnotic and in vesical catarrh. The drug is soluble in ether, alcohol, and in acidulated water.

11. *The Salts and Double Salts of Caffeine.*—Riegel, as is well known, has the merit of having first called attention to the virtues of the salts, and especially of the double salts, of caffeine. The caffeine preparations, especially when employed subcutaneously, exert a rapid and direct influence upon the heart, and are consequently particularly indicated when an immediate effect is called for. The absence of all accumulative action on the part of the drug enhances, of course, materially its value.

The principal indications for the caffeine salts are: valvular insufficiency in the stage of an impeded compensation, angina pectoris, and cardiac asthma. They have also been successfully tried against albuminuria and dropsy as sequelæ of heart-disease. After-effects were rarely noted. Lépine observed nervous excitement in the course of its administration, which, however, subsided after withdrawal of the drug. Quite recently, in some desperate cases, in which both caffeine and digitalis, given singly, had failed, their combination was found to be successful. Feilchenfeld, of Berlin, announced satisfactory results of the use of caffeine in the uræmia of scarlatina; 20 grains of caffeino-sodium salicyl. *pro die*, in connection with the other usual treatment, caused a rapid disappearance of albumen and also of vomiting.

The same observer noted in pleuritis, after the use of caffeine, an increasing diuresis and disappearance of the exudation. The following are the principal true salts of caffeine which have hitherto been prepared: the benzoate, hydrobromate, hydrochlorate, nitrate, salicylate, sulphate, and valerianate; of double salts are in the market the sodium benzoate (45.8 per cent. caffeine), sodium cinnamylate, sodium salicylate (62.5 per cent. caffeine), and sodium hydrobromate (52 per cent. caffeine). The citrate and tannate should also be mentioned. Riegel prescribes 12 grains of pure caffeine *pro die*, and increases the daily dose gradually up to 30 grains. The doses of the double salts can be easily deducted from those of the pure alkaloid.

12. *Calcium Hippuricum.*—A white powder, soluble in water. The action of this drug coincides with that of the corresponding sodium salt. Both drugs are employed in affections

depending upon an excess of uric acid in the body, and the dose is 10 grains.

Poulet claims that he has witnessed a rapid improvement from the use of the remedy in phosphaturia and cystitis, with a mucous and alkaline urine. The drug is further pronounced useful in scrofulosis, incipient cirrhosis of the liver, and struma. Poulet says its effects are miraculous in the uric acid diathesis.

13. *Calcium Santonicum.*—A white, tasteless powder, insoluble in water, possessing anthelmintic properties without being absorbed in the digestive tract. It is given in lozenges of 1 grain each.

14. *Cannabinon.*—A resinous body prepared from cannabis Indica. It is usually dispensed with sugar of milk (10 per cent.). Cinnabinon is by no means identical with tetanine, the intoxicating principle of Indian hemp. To correct the taste of the drug, roasted coffee is used in a proportion of 1½ grains of cinnabinon to 15 grains of coffee. The drug is reputed to be an hypnotic, which, in doses of 1 to 1½ grains, produces a tranquil sleep. While some observers emphasize its freedom from after-effects, Gnauck and Blumenthal observed vomiting, vertigo, and trembling after its use. Fronmüller and Hiller recommend the tannate of cannabinon as a potent and yet mild hypnotic.

15. *Quinin. Peptonat., Quinin. Phenylic.* (phenol quinine).

16. *The Salts of Cocaine—the Citrate, Hydrobromate, Hydrochlorate* (large crystals), *Oleate* (for external use), *Salicylate, and Tartrate.*—The mydriasis produced by cocaine is, according to Bradford, lessened by the addition of pilocarpine, in a proportion of 10 drops of a five per cent. pilocarpine solution to 1 f℥ of a four per cent. cocaine solution.

17. *Cotoinum Verum* ($C_{22}H_{18}O_6$), *Cotoinum Parapurum* ($C_{19}H_{12}O_6$).—The former drug is but little soluble in cold water, but soluble in alcohol and chloroform. Internally, the remedy has been exhibited in 15-grain doses to adults and 1 to 2 grains to children, in powder or emulsion, subcutaneously in acetic ether (1 to 4); in existing pain, 30 to 60 grains of hydrate of chloral are to be added.

Cotoine is chiefly used against diarrhœa, and has been recently tried also in cholera. Para-cotoine is given in 1½-grain doses to adults and ¾-grain doses to children. Albertoni asserts that the drug is insoluble in the gastric juice, and passes unaltered into the intestinal tract, where its absorption is effected. The drug, though unable to prevent decomposition, is certainly capable of retarding this process. The same property belongs to para-cotoine, though to a less pronounced degree. Albertoni strongly recommends cotoine in the diarrhœa of lunatic, cachectic, and marasmic patients, and speaks also of its beneficial effects in the various dental affections of children and in the intestinal troubles of phthisical subjects. The combination of cotoine and the subnitrate of bismuth answers well to numerous indications. The drug is contraindicated in hyperæmia of the intestines and hemorrhage of the bowels.

18. *Colchiceine.*—This drug, which is obtained from the alkaloid colchicine, is easily soluble in alcohol, chloroform, and boiling water. According to Hertel, colchiceine is as poisonous as colchicine, its lethal dose being 1½ grains for dogs and cats. Oberlin, however, regards colchiceine as much more poisonous than colchicine. Rabbits died, according to this observer, after the ingestion of $\frac{1}{8}$ grain of colchiceine in ten hours, and after 1 grain, within a couple of minutes, under complete paralysis. The drug affects principally the brain and spinal cord; opium and tannic acid act antidotal to it. In gout and acute articular rheumatism colchiceine may be exhibited subcutaneously in doses of $\frac{1}{64}$ to $\frac{1}{32}$ grain.

19. *Fluid Extracts.*—These classes of medicine were first introduced in 1833 by the apothecary Boullay, of France, and in 1838 by Dehamel and Procter, of Philadelphia. The fluid extracts are justly credited with being easy to dose and to dispense, and with retaining their integrity to an eminent degree. They are gradually gaining popularity in Germany, thanks to the incessant endeavors of their American manufacturers.

20. *Extract. Berberidis Fluidum.*—An alterative and tonic remedy in certain skin-diseases, especially psoriasis. Its dose is 20 to 30 drops three to four times daily.

21. *Extractum Cascaræ Sagradæ Fluid.* (extr. rhamni Purshianæ).—Acts on the secretory system, and is recommendable in dyspepsia and habitual constipation, and also in dysentery. Its dose is 15 drops to 1 drachm. There exists also a dry hydrochloric extract of this drug. The following is a choice dispensation of the remedy in habitual constipation:

℞ Extr. cascar. sagrad. fl.,
Syr. cort. aur.,
Aqu. dest., āā f℥ss. M.
S.—One teaspoonful three times daily.

22. *Extr. Euphorbiæ Piluliferæ Fluid.*—Prepared from euphorb. pilulif., a native of

Queensland, and employed in asthma as a gentle stimulant and narcotic.

The active principle of the drug is soluble in diluted alcohol and water. On animals even small doses exert a toxic influence, and, if larger doses are given, respiratory and cardiac action are at first quickened, then slowed, and death ultimately ensues by paralysis of the centres of respiration and circulation. There is no accumulation tendency in the drug, and its elimination from the system takes place through the hepatic channels. The dose of the fluid extract is ½ to 1 dr. twice daily. Dujardin-Beaumetz employs a tincture, of which 15 drops represent 75 grains of the plant. Its dose is 10 to 30 drops.

The drug is to be used cautiously on account of its unquestionable poisonous character.

23. *Extr. Euonymi Atropurpur. Fl.*—A purge and cholagogue.

24. *Extr. Hamamei. Fl.*— Prepared from the bark of hamamelis Virginica. A tonic and astringent. The drug enjoys a just reputation in all forms of hemorrhage, especially those of the lungs, uterus, and piles. Its dose is 1 to 2 f3 *pro die.*

Black used the remedy with excellent results externally, combined with equal parts of glycerin and some starch, in grave cases of bleeding hemorrhoids. The same physician recommends also its internal use in bronchial catarrh, hæmoptysis, and atonic and colliquative diarrhœa in doses of 1 fl. dr. every three hours.

25. *Hazeline.*—A product of distillation from the bark of hamamel. Virg. It resembles in its efficacy the tincture of arnica, and is employed externally, diluted with equal parts of water, against bleeding and catarrhal conditions of the eye. Internally, it is used in doses of ½ dr. in water every four hours against profuse menstrual flows.

26. *Extr. Lippiæ Mexican. Fl.*—This drug is given as an expectorant in doses of ½ to 1 dr. *pro die.* A camphor (lippiol) contained in lippia Mexicana, from which the extract is prepared, is its active principle. The remedy is utilized in acute catarrh of the respiratory passages and in the dyspnœa of emphysematous patients.

27. *Extr. Piscidiæ Fluid. vel Siccum.*—Powerful hypnotic drugs, the former being used in doses of ½ to 2 dr., the latter in doses of 7 to 15 grains. The dry extract appears less reliable and not void of unpleasant secondary symptoms, such as vertigo. Fronmüller employed pills, 1 grain each (2 to 4 *pro dosi*), prepared from the dry extract. The fluid extract possesses sedative properties in cough and dyspnœa.

28. *Extr. Rhois Arom. Fl.*—Recommended in affections of the bladder, urethra, and uterus, especially when depending upon excessive secretions, including hemorrhagic losses.

29. *Extr. Ustilagin. Maidis* (corn ergot, gramineæ).— Prepared from the parasite of zea mais (corn ergot).

This fluid extract, which is given in doses of 10 to 12 drops, is a substitute for secal. corn., and is said to be preferable to the latter in producing no pains, and in being relatively harmless.

30. *Extr. Viburni Fl.*—Prepared from viburnum prunifolium. According to American authoritative assertions a valuable tonic and sedative in threatening abortion, in dysmenorrhœa, and the discomforts subsequent to confinement. Its dose is ½ to 1 fl. dr. four times daily.

31. *Helenine* (alant-camphor) ($C_6H_{10}O$).—Colorless, crystalline needles of a neutral reaction, which are almost insoluble in water, but easily soluble in hot alcohol, ether, and ethereal oils. Rorab believes that from its antiseptic virtues helenine may be utilized in tuberculosis, malaria, and catarrhal diarrhœa. One part of the drug, according to this observer, is able to protect 10,000 parts of urine against decomposition. Valenzuela obtained excellent results from this drug in pertussis and chronic bronchitis, and noted a diminution of the cough, dyspnœa, and pectoral pains to invariably follow upon its use. A narcotic effect was never observed. Besides, helenine produces a tonic effect upon the digestive functions, and may therefore be given even to phthisical patients affected with grave diarrhœas.

32. *Homatropine* (Ladenburg, Merck).—A considerable reduction of its price is all the information obtainable regarding this drug.

33. *Hydrargyr. Tannic.*— Brown-greenish scales, forming a gray-green powder on being rubbed up; its proportion of mercury is at least forty per cent. The preparation is decomposed by concentrated acids and alkalies under separation of microscopically visible mercury-globules. Diluted muriatic acid does not materially affect this preparation. On the addition of water and acetic acid tannic acid is precipitated. The drug has an indisputable value as a mild antisyphilitic remedy.

The separation of mercury is so fine that a

quick absorption results in the intestines. This medication has consequently been aptly called "an internal inunction cure." The drug is given with four times its quantity of sugar of milk in 1½-grain doses four times daily in wafers.

In weak patients, and such as are predisposed to diarrhœa, Lustgarten prescribes the remedy in combination with tannic acid after the following formula:

℞ Hydr. tannic oxyd., 1½ grains;
Acidi tannici, 1 gr.;
Pulv. gummosi or sacchar. lactis, āā 7 gr.;
Pulv. opii, $\frac{1}{12}$ gr. M.
S.—As one dose.

34. *Iodoform.*—This preparation (iodoform with gelatin) is intended for insertion into wounds, opened buboes, and fistules. Besides, it is used in gonorrhœa and other affections of the urethra, and also in the puerperal affection of the uterus.

35. *Kalium Osmicum* ($K_2O_5O_4 + 2H_2O$).—A violet-red powder, easily soluble in water. Its practical employment is somewhat marred by its hygroscopic tendencies, and many physicians prefer, hence, the salt to the acid. The indications of the acid coincide with those of the salt.

Both preparations enjoy a certain reputation in peripheral neuralgias, where, according to Neuber's recommendation, they are employed hypodermically. Mohr speaks highly of a one per cent. watery solution as a remedy of rheumatic ischias. Szumann and Eulenberg recommend parenchymatous injections of osmic acid against goitre, while Delbastaille employed injections into sarcomata and lymphomata.

Quite recently the drug was proposed by Wildermuth as an excellent medication of epilepsy when combined with bromide of potassium. Wildermuth gives doses of $\frac{1}{12}$ to $\frac{1}{6}$ grain in pills with bolus alba. These pills are best coated, as they are apt to produce gastric disturbances when used for a long time.

36. *Keratin. Pepsino Paratum.*—This keratine is not affected by the acid contents of the stomach, as by the action of pepsine and muriatic acid it is freed from all substances which are soluble in the stomach; the preparation is only dissolved by the alkaline juice of the intestines. It is a gray powder, and has recently been warmly recommended by Dr. Unna, of Hamburg, as a suitable coating for all such pills the solution of which is desired exclusively in the intestines. Consequently, when prescribing arsenic, sugar of lead, nitrate of silver, phosphorus, and anthelmintic remedies in pill form, keratine can be used with great advantage.

37. *Liq. Ferri Peptonat.*

38. *Lithium Hippuric.*—This drug is employed in doses of 7 grains against affections depending upon an excess of uric acid.

39. *Naphthalinum Purissimum Alcohol. Depuratum.*—Being insoluble in water, alkalies, and acids, this drug can be brought into the system in relatively large quantities without experiencing any material absorption in the digestive tract. Rossbach claims to have the drug successfully exhibited in doses up to 75 grains in acute and chronic diseases of the intestines, in infantile diarrhœa, incipient typhoid fever, and tubercular intestinal affections. Priebram, Schwarz, and Ewald speak likewise well of the value of naphthaline, and agree that the drug possesses eminent antiseptic properties, and does not alter the principal systemic functions, such as circulation and respiration. The single dose is 15 grains, and 75 grains may be given *pro die.*

Externally, naphthaline is used combined with equal parts of vaseline against scabies, herpes tonsurans, favus, and eczema marginat. Oil of bergamot is, in a proportion of 1 part to 40 parts of naphthaline, an efficient means to disguise the taste of the latter.

Rossbach also uses naphthaline in the form of irrigations. Fifteen to seventy-five grains of the drug are melted in two to four fluidounces of water, mixed with twenty to forty fluidounces of hot water, and gradually cooled down.

Recently Wolf called attention in an American journal to the fact that naphthaline, dissolved in the proportion of one to five hundred in hot water, excelled alcohol as a preserving medium of anatomical preparations.

40. *Pelletierine* (punicin), the alkaloid of iort. punic. granat. ($C_{16}H_{30}O_2$) and *Isopelletierine*, are powerful anthelmintic drugs. There also exist a tannate, a sulphate, and a valerianate. The sulphate is a body of a thick fluid consistency, and in order to dispense it readily a ten per cent. solution is best kept ready, which is then dispensed in 1-drachm doses.

The tannate is a dry powder, and is given in 20-grain doses in water. The following combination of the sulphate and of tannic acid have been found especially effective:

℞ Pelletierin. sulph., gtt. viii;
Acid. tannici, gr. vii;
Aq. dest., f℥i. M.
S.—Take in one or two doses within half an hour; after that a laxative is to be taken.

Samples of tænia serrata which lived several days in water at a temperature of 98° (F.), with one per cent. of chloride of sodium and one-tenth per cent. of carbonate of sodium, grew lifeless within a couple of minutes after the addition of one one-hundredth per cent. of pelletierine. As the drug increases the arterial pressure, it is contraindicated by the existence of an aneurism.

41. *Pyridine Puriss.* (nitric crystal., sulphur. crystal.).—Pure pyridine was recommended against asthma originally by Germain Sée, of Paris. He orders about one drachm to be poured out on a plate, which is placed in a corner of the sick-room, and in this manner makes the patient inhale for about twenty to thirty minutes the pyridine vapors mixed with atmospheric air. A repetition two or three times of this procedure is said to be sufficient to relieve the dyspnœa.

The salts of pyridine serve for internal application.

Pyridine is, when exhibited as an inhalation, rapidly absorbed, and can be demonstrated in the urine a couple of minutes after its inhalation.

42. *Sanguis Tauri Pulv.* (ox-blood powder).—An odorless pale-brown powder, soluble in cold water, giving a blood-red color. The ox-blood powder is recommended as an artificial food for children in doses of 2 drachms, and for adults in doses of 6 drachms, three times daily in water, wine, milk, or black coffee, and is to be taken at meal-time.

43. *Serum Sublimat.* (one per cent. to ten cent.).—The union of mercury and of albumen is better borne by the system than the pure chloride of mercury. Lister recommends the employment of serum-sublimate for the saturation of surgical dressing material, such as gauze, cotton, and lint.

The one per cent. serum sublimate is a fluid, while the ten per cent. preparation has the form of thin plates.

44. *Terpinhydrat.* ($C_{10}H_{16} + 3H_2O$).—Colorless crystals of a faintly aromatic taste. Lépine advocates the use of this drug as a good expectorant in chronic and subacute bronchitis, and in chronic nephritis in place of the oil of turpentine. Its dose is 3 to 6 grains.

The high efficacy of turpentine in diphtheritis being indisputable,—Possel wrote as early as 1880 about this subject,—it is to be expected that terpine may likewise be useful in this affection. The hydrate of terpine is soluble in boiling water, in cold and boiling alcohol, chloroform, and ether, but sparingly soluble in turpentine.

45. *Urethan. Puriss.* ($NH_2CO_2C_2H_5$).—The ethylic ether of carbaminic acid: white crystals, easily soluble in water, odorless, but tasting somewhat like saltpetre.

V. Jacksch found experimentally on animals that doses of ½ gramme pro 1 kilogramme of bodily weight produced no toxic effects.

The drug evinced, as alleged, hypnotic virtues in very different affections, without in any way calling forth any secondary untoward symptoms, as is nearly the rule with all other hypnotics.

THE RADICAL CURE OF HYDROCELE BY ANTISEPTIC INCISION.

At the present time there may be said to be three methods prominently before the profession for the radical cure of hydrocele,—the time-honored injection of iodine, antiseptic incision, and suture of the tunica vaginalis and the scrotal skin (with drainage), proposed by Volkmann, and the more recent method of the injection of carbolic acid, suggested by Levis, of Philadelphia. An important modification of Volkmann's method has been adopted by Bergmann, of Berlin. It consists in the extirpation of all the tunica vaginalis save that covering the testicle. Dr. William T. Bull, in a paper read before the New York Surgical Society (*New York Med. Journ.*, March 13, 1886), states that he has performed the operation of antiseptic incision upon fourteen patients. One of these cases was operated on at the same time for the cure of a large hernia, and death followed from peritonitis, so this case may be therefore thrown out of consideration. The other thirteen patients all made satisfactory recoveries but one.

Of the twelve successful cases, ten were hydroceles of the tunica vaginalis, and two were hydroceles of the cord. The two latter had existed each for three or four years. The duration of the former was in six cases "about one year," in two cases between one and two years, in two others three years and over. As regards previous treatment, two had been injected with carbolic acid (one of them on two occasions), one with tincture of iodine, and the rest had been tapped or received no treatment. At the time of operation but one sac was observed to be decidedly thickened. This contained one or two calcareous patches, which were cut out. One hydrocele of the cord, as large as a horse-chestnut, was found to be made up of five or six cysts. This case car-

bolic acid had failed twice to cure. The other hydrocele of the cord was in reality a compound cyst of the head of the epididymis. A number of cysts of the size of a split pea were clustered about the epididymis, and contained within a larger cyst which reached up on the cord for an inch and a half.

In ten cases Volkmann's operation was done; in two (the cysts of the cord and epididymis) the entire parietal layer of the tunica vaginalis was excised. Bichloride of mercury of the strength of 1 to 5000 was used in moderation to irrigate the wounds, and extreme care taken to tie all bleeding points. The incisions were long enough to reach from the top of the sac to the bottom of the scrotum. The tunica vaginalis was united by a continuous catgut suture to the skin, and two or three deeper sutures were applied to hold the two halves of the sac in contact. A further effort was made in this direction by the application of the dressing in such a way as to *hold* the serous surfaces together. Bone tubes were used in three cases, rubber drains in nine. The latter were shown to be preferable. The bone tubes softened rapidly, but were not absorbed at all, and did not adapt themselves to the sinuosities of the wound. The dressing was uniformly of peat-bags (with bichloride) and bichloride gauze, with occasionally a strip of iodoform gauze over the line of suture, and an outer layer of absorbent cotton. There was no instance of excoriation or marked erythema of the skin. The penis protruded through the middle of the dressing, which was applied snugly with crinoline bandages. One or two patients had to be catheterized for twenty-four or forty-eight hours; but this was the only discomfort experienced. The career of the wounds was in all cases aseptic, and without fever. A temperature of 100.6° on the evening of the second to third day, without any acceleration of the pulse, was the greatest constitutional disturbance. With little variation, the first dressing remained in place till the seventh day. On its removal the tubes were withdrawn, and a lighter dressing of iodoform or boric-acid ointment and plain absorbent cotton was applied supported by a suspensory bandage. This was changed as often as it became soiled. The patients were allowed to move about a day or two later, but were not, with one or two exceptions, discharged till the sinuses were healed. As a rule, primary union was found on removing the first dressing. In six cases this was *complete* except where the drainage-tube emerged; in five, besides the "drain sinus," there was a strip of granulations along a portion of the line of suture, forming a quite superficial ulcer, which scabbed over rapidly. In one case primary union was secured, but an accumulation of pus (without fever) made it necessary to break down the adhesion, and the abscess required two months to heal. The sinuses left after removal of the drain healed without special attention. There was no instance of orchitis, or epididymitis, or inguinal adenitis, and the induration and thickening along the cord, which have been noted by others, disappeared by the time the sinus closed, or soon after.

As regards the *time* occupied by the treatment, the shortest period of confinement to bed was seven days, the longest three weeks; the average stay in bed in all twelve cases was ten days. The shortest stay in hospital was ten days, the longest sixty days, the average twenty-seven days. Two cases were much slower in healing than the rest,—one from the occurrence of the abscess just referred to, the other from unexplained causes. Dr. Bull has had the opportunity of examining five of these patients one year after the operation, and they remain cured. Two have been seen six months, two others four months after operation, and are free from recurrence. All were operated upon under ether except one. In this case cocaine was used, with the effect of rendering the operation absolutely painless.

The result of the treatment of these thirteen patients may be briefly stated as follows: One has died from mercurial poisoning. Twelve have recovered,—ten after incision with suture, two after excision of the sac. The wounds, except in one case, have healed without pain or constitutional disturbance, and on an average in twenty-seven days, ten of which were spent in bed. Nine out of twelve patients are known to have had no recurrence at a period of from four to twelve months after the operation.

The possibility of recurrence is generally admitted, though alleged to be rare, and the cause is found in the failure of the two serous surfaces to unite fully after suture. Small cavities are left which become the seat of a reaccumulation. In order to obviate this, Von Bergmann has proposed the extirpation of the parietal layer, and carried it out in twenty cases, as mentioned above. The wounds healed without febrile movement on an average in ten to twelve days, and no recurrence has yet been seen.

The technique of the operation needs but slight mention. The incision should reach from the top of the sac to the bottom of the scrotum, and Dr. Bull prefers to place its lower end behind the testicle in order that the drainage-tube may be out of the way. The tunica is best removed by stretching it on the fingers and cutting through and pushing back the loose connective tissue with blunt scissors. It is much easier than the extirpation of a hernial sac where the presence of a truss has made the layers adherent. The membrane is removed close up to the epididymis and testicle. It is important to be very painstaking with the ligatures, and to have the drain long enough to pass beyond the testicle. In other respects one proceeds as in Volkmann's operation, but the suturing of the wound is simpler, as the tunica is absent.

ABDOMINAL SECTION FOR INTESTINAL OBSTRUCTION.

The subject of abdominal section for intestinal obstruction is attracting so much attention at present that we give in full the account read by MR. A. E. BARKER before the Clinical Society of London of a case of acute intestinal obstruction, followed by acute general peritonitis, in which abdominal section and release of the implicated bowel was performed, the peritoneum thoroughly sponged out, and in which rapid recovery took place (*Brit. Med. Journ.*, March 6, 1886).

The patient was a man, aged 23, who had enjoyed good health with the exception of flatulent dyspepsia, up to Saturday, November 14, 1885. At 7 P.M. on that day he had a loose motion, with a feeling of sickness, and three or four minutes later was seized with a violent pain in the abdomen, and fell down, rolling about in acute suffering. This pain commenced at a point midway between the umbilicus and right groin. At 7.30 he began to vomit, and continued to do so through the night and next day, until Monday evening, when Mr. Barker was sent for. At the onset, he was seen by Mr. Knaggs, of Camden Road, who gave large enemata, with opium internally, and hot fomentations over the abdomen. This treatment was continued with much judgment for the next forty-eight hours, but with no relief. On the contrary, the pain increased, and became general over the whole abdomen; the vomiting continued of a grass-green color, but never became stercoraceous; the belly grew more and more distended, and the centre of acute tenderness shifted to the left side of the umbilicus. The peritoneum also began to fill with fluid; there was complete obstruction of the bowels from the first, and no flatus was passed. No distinct tumor was to be felt anywhere. When he was seen by Mr. Barker on Monday evening, the condition was very grave, and he at once decided to perform abdominal section, regarding the case as one probably of obstruction from a constricting band, or from volvulus of the small intestine. With strict antiseptic precautions, the abdomen was opened in the middle line, from the navel to the pelvis, and was found to contain much flaky serum and free gas; the intestines were coated with lymph, and moderately distended. The small intestine was now passed through the fingers from below upwards, until the middle third of the jejunum was reached. When this was drawn upon, there came a sudden rush of fluid through the portion held in the fingers, and the next moment there came out a loop of bowel deeply congested and ecchymosed, and distended to about three or four times its normal girth, and containing much fluid. Beyond this loop the gut was distended and moderately congested, but was sharply marked off against the implicated loop by the absence of ecchymoses. The bowel was now passed through the fingers downwards, to make sure that no other obstruction existed, and then the cæcum and vermiform appendix were turned out of the wound and examined with the same object; they were quite sound, though sharing in the inflammatory distention and congestion to a slight extent. The hand was now passed into the abdomen, and every part of it was explored, but nothing further was found. The gut having been carefully cleansed was now replaced, and the whole abdomen was mopped out with carbolized sponges, passed into every recess on long holders. The greatest accumulation of inflammatory products was found in the flanks and pelvis, and required repeated sponging. When the whole cavity had been cleaned, the wound was united with seven deep and two superficial carbolized silk sutures in the usual way, and was dusted with iodoform and dressed with salicylic wool, secured with a broad binder. The patient bore the operation well on the whole. He had a good deal of pain in the night, and vomited twice before morning. The vomited matter was no longer bilious, but consisted of watery altered blood. It came up for the last time at 9.30, twelve hours after operation. The patient progressed extremely well after this, the peritonitis disappearing rapidly. The

wound was dressed for the first time on the fifth day, and was then found united by first intention. Five of the stitches were taken out, and the wound was supported by broad strips of sticking-plaster applied directly to the skin with salicylic wool and a binder over all. On the seventh day, the remaining stitches were removed, and the wound was supported as before. On the eighth day, a motion was passed spontaneously, and again on the ninth. These motions were stained with old blood. On this day, owing to an error in diet, he vomited and burst open the upper two-thirds of the wound, in spite of the strapping, and a knuckle of the intestine protruded. On seeing this six hours later, Mr. Barker removed the dressings, cleansed the protruded gut under the spray, wiped out the abdomen and the wound, and replaced the gut. The opening was closed as before, and similarly dressed. The temperature in the rectum rose on the night following to 102°, but beyond this there were no disquieting symptoms throughout convalescence, the patient being able to take light solid food for a couple of days later. The wound healed in great part by first intention, but some of it by granulation. (Patient shown.) In reviewing this case, Mr. Barker dwelt upon the following points: 1, the nature of the obstruction; 2, the performance of abdominal section in the midst of acute general peritonitis; 3, the rapid disappearance of the latter after operation. He pointed out that, from a comparison of this with recorded cases, there could be no doubt that it was a case of volvulus of the jejunum, a very rare condition. The whole case corresponded closely with the few others on record, none of which had been operated on except one. The onset of general peritonitis he regarded as an extra reason for early operation in such cases, and showed that this view was supported by pathological reasoning and clinical experience. The rapid disappearance of the peritonitis, due to the release of the intestine and cleansing of the abdominal cavity, was then commented on; and it was pointed out that the good result was besides in great part to be attributed to the judicious treatment of the case from the first with opium and enemata, and the comparative rest that the bowels were then placed in up to the time of operation, which was not delayed a moment after it was evident that other means had failed. That such an operation could only be successful when performed early, and under the strictest antiseptic treatment, was also pointed out.

VARICELLA AND ITS DIAGNOSIS.

Dr. Henry Ashby gives the following tabular contrast as to the points of diagnosis between varicella and varioloid (*Archiv. of Pediatrics*, February, 1886):

VARICELLA.	VARIOLOID, OR MODIFIED SMALLPOX.
Incubation.—Thirteen to sixteen days.	Twelve days.
Premonitory Fever.—A few hours.	Two to three days.
Premonitory Symptoms.—Mostly *nil.*	May include pain in back, headache, vomiting, delirium, drowsiness, convulsions, and fever.
Rash.—Red spots, in a few hours becoming vesicular, drying up in three or four days, leaving crusts; come out in crops on four or five successive days on scalp, body, limbs, face, and mucous membranes. Vesicles mostly monolocular.	Red, shot-like papules and soft palate, appearing first on face and wrists; during next twenty-four or forty-eight hours over body and limbs; papules become vesicular after two or three days, and pustules by eighth day of disease, or more frequently dry up, leaving scabs.
Temperature.—Intermittent in character.	Sudden rise, reaches height when the rash is fully out, followed by a speedy fall. Secondary fever slight in modified cases.

THE INFLAMMATION OF THE LIVER AND HEPATIC ABSCESS.

Dr. George Harley has been publishing in the February numbers of the *Medical Press* a series of valuable papers on the causation, the diagnosis and treatment of hepatic abscess, and inflammation of the liver.

His ideas as to treatment are so novel, and seem to be so valuable, that we publish a tolerably full abstract of his methods, for the surgical procedures hitherto adopted in the treatment of diseases of the liver have been mainly confined to measures designed to promote the evacuation of abscess-cavities, or of cystic growths; but little has been attempted beyond this, inasmuch as the organ in question has been considered to lie beyond the line of direct operative interference, on grounds, it must be admitted, that appeal less convincingly now than in the days antecedent to modern surgical improvements. Dr. Harley, however, advocates so novel, and at first sight so startling, a modification of the usual treatment of hepatitis, that special attention is certain to be attracted to his utterances and experiences.

In a case of acute hepatic congestion, according to Dr. Harley, the first thing is to enjoin strict rest. The second is to put the patient on low diet. The third, to freely clear out the bowels. The fourth, to relieve the local discomfort by the application of hot, thick, and large linseed-poultices. The fifth, if there be signs of threatening suppuration, to apply a freezing mixture of ice and salt, or leeches, or even cupping-glasses, over the painful hepatic region. It is sometimes surprising how speedy and complete is the relief afforded by this indirect mode of local depletion; but the striking novelty of Dr. Harley's paper is a much better mode of relieving an engorged liver, to which he has given the name of hepatic phlebotomy, from its being in reality a mode of bleeding the liver itself. Euonymin, iridin, leptandrin, podophyllin, and all other forms of hepatic purgative stimulants, are totally inadmissible in cases of hepatic congestion. Mercury is here our sheet-anchor, both as a purgative and an antiphlogistic.

When hepatitis, no matter what its variety may be, has once reached the congested indurated stage, Dr. Harley found much benefit from puncturing the capsule of Glisson.

So soon as the liver of a patient is not only enlarged, but hardened, in consequence of the pressure to which its inflamed tissues are subjected, as the result of their engorgement and confinement within their inelastic fibrous covering, there can be no more effectual way of giving relief than by puncturing the capsule of Glisson. Dr. Harley was led to adopt this plan of treatment from his experience of the benefits derived from puncturing the distended sheath of the sciatic nerve in cases of acute neuritis, which is done on precisely the same principles as the surgeon punctures the tense unyielding tunica albuginea to relieve pressure on the inflamed secreting structures of the testicle in cases of orchitis.

The operation of puncturing the capsule of Glisson is done with a trocar of the diameter of a No. 2 or 6 catheter, according to the gravity of the case, inserting the trocar in each lobe of the liver, and allowing it to remain for several minutes.

In support of the truth of these statements Dr. Harley reports the case of a man, aged 52, who came to him with a liver enlarged and indurated in all directions, in which this operation produced in eighteen hours the greatest relief and a general decrease in the size of the liver.

As regards direct bleeding from the liver, or hepatic phlebotomy, an indication which is generally acknowledged to exist, Dr. Harley shows that cupping or leeching the abdominal parietes can be of no avail; for since none of the hepatic blood-vessels communicate with those of the abdominal parietes, it is evident that it must be utterly impossible that the withdrawal of blood from the vessels in the abdominal parietes can have any direct effect upon the quantity of blood in the liver.

This is, however, according to Dr. Harley, capable of being accomplished with perfect safety by piercing the liver with a lung-trocar, from left to right, taking care only to avoid the large vessels which are in the neighborhood of the transverse fissure. The trocar should, therefore, be kept in a line between the centre and the upper convex border of the liver, in which position there are few large vessels, and there is, therefore, no risk of the entrance of air into the veins. Dr. Harley reports a case in which this plan was pursued with the greatest benefit.

In this connection the *Medical Press* for February 24 refers editorially to this operation as follows: "It is needful that the most careful and cautious consideration should be given to the subject in all its details ere an unqualified approval can be given to an operation, the risks and possible dangers of which have not yet been fully discussed. No good result can follow the hasty and general adoption of any surgical improvement to which recognition is accorded on first and apparently favorable results; and although in Dr. Harley's experienced hands, guided by a long and extensive acquaintance with liver-disease in all its varieties, the best consequences may safely be expected to follow the adoption of the course he recommends, it must still be remembered that only a few practitioners are possessed of the skill and knowledge requisite to enable them to form an accurate diagnosis and a sure judgment respecting the cases appropriate for treatment by an unfamiliar and important operation. We do not desire, or intend, to disclaim the advantages which Dr. Harley considers to be identified with his proposal; we only urge that it shall be fairly, fully, and conscientiously considered in every aspect before its adoption is made an article of faith among practitioners, and especially young practitioners. It promises to be a salutary proceeding according to the evidence adduced by its originator; and in the best interests of medicine and of suffering humanity it cannot be too surely grounded on such

proofs of efficacy as the skilled and experienced can alone assign to it in the earlier stages of its employment as a remedial procedure."

As regards the treatment of hepatic abscess Dr. Harley is, in general, in accord with the views held by the majority of the medical profession. He believes that the best plan for opening an hepatic abscess which has not pointed is with a trocar, either with or without the aid of the aspirator. Free incision with a knife, in his opinion, when the abscess has not pointed, but adds to the risk without yielding any proportionate advantage to the patient. In any case, after evacuation of the pus a drainage-tube ought to be inserted in the sac of the abscess, and the cavity well washed out with tepid antiseptic water. At the same time germicides, in the form of salicylic, carbolic, or mineral acids, along with quinine, should be given, and the general health of the patient carefully attended to, for even in the most favorable cases liver-abscess is invariably a most exhausting and dangerous affection.

As regards the diagnosis of hepatic abscess, Dr. Harley calls attention to the fact that it should not be forgotten that suppuration of the liver is always preceded by a longer or shorter period of hepatitis; the severity of the pain is, however, in no instance a criterion of its severity. For we may have great pain with slight inflammation, and scarcely any pain with a considerable suppuration. A superficial abscess is always more painful than a deep-seated one. If during the ordinary course of a hepatitis the patient should suddenly complain of chilliness or shivering,—when there is no reason to suspect occlusion of the bile-duct,—and the rigor is immediately followed by an increase of temperature and an aggravation of the constitutional disturbance, while at the same time the hepatic tenderness is increased, suppuration may be suspected to have set in.

There is always a disinclination to take food, and if the suppuration has existed for some time, there is frequently a well-marked diarrhœa, with or without blood. Vomiting also occasionally occurs, but it is not a common symptom. In some, though not in all, cases of liver-abscess, sneezing, coughing, and deep inspiration causes pain, and then the patient cannot lie comfortably on his side.

The most notable sign of liver-abscess, when there exists the before-mentioned hepatic symptom, is, in Dr. Harley's opinion, high temperature, varying from between 102° and 105°. The fever is often associated with hectic and sweating exacerbations. The more superficial the abscess is, the easier is it diagnosticated. When situated at the lower margin of the liver, where it projects from under the false ribs, the abscess appears as a smooth, hard swelling, with a feeling of more or less distinct fluctuation about it. On the other hand, when it is situated within the margin of the ribs, palpation furnishes no signs whatever of its existence. Even firm pressure causes no increase of pain beyond, perhaps, a feeling of a more diffused discomfort. Smart percussion, on the other hand, in general cannot be readily tolerated. When the abscess is large it causes bulging of the intercostal spaces, even before it actually points, and fluctuation may then be perceptible. But this is not often the case until it points, even when the abscess is below the ribs. To sum up, then, it may be said that all that we have to guide us in the diagnosis of the majority of liver-abscesses is the existence of pain in the liver, increased on pressure, associated with rigors and high temperature, and the other constitutional symptoms above mentioned. But as the combination of even all of these is not always conclusive, in cases of doubt it is true wisdom to have recourse to an exploring trocar.

The one Dr. Harley recommends to be employed in the general run of cases is a fine, six-inch long French instrument, but one eight inches long, the diameter of a No. 3 English catheter, may be used. There is, comparatively speaking, but little risk in the employment of either, if care be taken not to insert them too near the ribs, so as to avoid the danger of the instrument being either bent or broken by the ribs during a sudden and forcible act of inspiration, and keeping the point of the instrument from the vicinity of the larger blood-vessels in the neighborhood of the transverse fissure.

INFLUENCE OF ANÆSTHESIA BY THE INHALATIONS OF NITROUS OXIDE UPON VARIOUS FUNCTIONS OF THE ECONOMY.

The researches of Drs. Jolyet and Blanche in 1873 demonstrated that anæsthesia, produced by the inhalations of pure nitrous oxide, is always accompanied by a state of asphyxia sufficient in itself to produce anæsthesia. Dr. Lafont (*La France Médicale*) thinks that this asphyxia concomitant on the anæsthesia produced by nitrous oxide may be a source of serious danger. In support of

this fact, he refers, first, to the production of death of the fœtus and abortion at four and one-half months of pregnancy; second, the appearance of chlorosis in a young, growing girl; third, the appearance of epileptic symptoms in a young woman who had been exempt from them for many years; fourth, the appearance of albuminuria in a case of mitral insufficiency; and, fifth, diabetes mellitus, observed twice in the same patient, following each time the administration of nitrous oxide. This latter point Dr. Lafont has studied upon himself. He found, in the first place, that his urine was normal, that is, it was free from sugar, and he found that, two hours after two successive inhalations of nitrous oxide, after a few minutes' interval, his urine contained 1.65 parts of sugar per thousand. Six hours afterwards there were 18.40 parts per thousand, whilst three days afterwards the quantity had been reduced to 3.95 parts, and on the fourth all trace of sugar had disappeared. Dr. Lafont also found that in the dog glycosuria was produced after the inhalation of nitrous oxide. This condition of glycosuria was found to depend upon an actual increase of sugar in the blood, the amount found increasing from one and one-half parts per thousand, which is said to be normal, up to three parts per thousand.

In following up still further the action of nitrous oxide, Dr. Lafont found that the influence of this gas on the respiration varied with the animals experimented upon; that in man the respirations became more ample without changing their rhythm. In the rabbit, at the commencement of the inhalations, respiration becomes more frequent and fuller, but becoming slower at the moment that anæsthesia is complete. In the dog the respiratory movements gradually increase in frequency and fulness up to the moment of anæsthesia, at which time the movements are panting, and may become suddenly arrested, the stoppage being more or less prolonged, and sometimes proving fatal. As regards the influence of nitrous oxide on arterial pressure, Dr. Lafont found also a variation, according to the animal experimented on. On the rabbit the pressure remains stationary, or becomes slightly lower. In the dog it rises gradually up to the moment of anæsthesia, and then becomes stationary. At the commencement of the inhalations there is an increase in the frequency of the pulse in all animals. When anæsthesia is complete, the movements then become slower, and the heart may often be arrested. This slowing of the pulse may persist even after recovery of consciousness. The increase of pressure observed in the dog Dr. Lafont found to be due to the condition of agitation of the animal, while the slowing of the pulse he attributes to stimulation of the pneumogastric nerve, since it is absent when atropine is given.

RESORCINE AND COCAINE IN WHOOPING-COUGH.

According to a note appearing in the *Centralblatt für die Medicinischen Wissenschaften* of February 13, 1886, Dr. Moncorvo feels satisfied that resorcine is a valuable drug in the treatment of whooping-cough. Having used resorcine for a long time alone, and also—as is his habit at present—immediately after the application of a ten per cent. solution of muriate of cocaine to the larynx and pharynx, he found that the combined use of these drugs fnrnished better results than could be obtained from their application singly.

In this connection we recall that in the *Berliner Klinische Wochenschrift*, No. 44, 1885, Dr. J. Prior, of the University of Bonn, eulogized cocaine as the remedy *par excellence* in pertussis, while, as our correspondent from Berlin assures us, the remedy has received an exhaustive trial at the Charité, and has been found to be almost wholly useless. In this controversy—Henoch *versus* Prior—we are probably safe in following the former as the best guide in the field of pædiatrics.

A CASE OF RECOVERY AFTER GASTRO-ENTEROSTOMY FOR CANCER OF THE PYLORUS AND STOMACH, WITH A NEW METHOD OF SUTURE.

Since first designed and performed by Woelfler in 1881, gastro-enterostomy has been undertaken at least twenty times abroad. In sixteen of these cases it was done on account of advanced carcinoma of the pylorus with ten deaths, and in four with non-malignant pyloric stenosis with one death. Most, if not all, of the sixteen were desperate cases for any operation. In the *Brit. Med. Journ.* for February 13, 1886, Mr. Arthur E. Baker reports the first successful instance in which this operation was performed in England, and he describes a new method of suture, which seems likely to offer advantages in the future.

The patient, aged 37, the mother of eight children, one of whom died of a malignant growth in the neck in infancy, began to suffer from severe gastric disturbance a year and a

half ago. This consisted of great sickness and vomiting, with pain in her stomach. Since then hardly a day passed without retching; this was always worse after dinner, but was less in the evening, and when the patient was at rest.

On August 25, 1885, the patient noticed a lump, about the size of a walnut, in the epigastric region, and, at the same time, the vomiting and pain became much worse: the latter was aching and dragging in character. The tumor had grown larger since, especially within the last three months. When first noticed, the lump, the patient thought, was a little more to the left than now. It appeared irregularly nodulated from the first.

On admission into University College Hospital on December 19, 1885, the chief complaint was pain in her left side, and great weakness and loss of flesh (weight, seven stone three pounds). During the week preceding, her attacks of sickness had not been so severe; she had had only four or five. The vomit was watery and frothy, but never consisted of food, and never showed traces of blood; there had been much constipation for a long time.

State on Admission.—In the middle line of the body, about two inches above the umbilicus, was a hard, nodular swelling, about the size of an egg, very superficial, and very mobile. It shifted spontaneously from side to side during the day, and ascended a little, but did not descend below the point indicated. When in the middle line, it pulsated with the stroke of the aorta. It was tender on pressure, and caused most suffering when it lay towards the left side. There was no deficiency of resonance to be detected over it, and there was no gastric dilatation; the tumor moved with respiration; the abdominal organs appeared quite healthy.

On December 28 was made a careful examination of the abdomen under ether. The tumor could now be easily grasped through the thin parietes, and was found to be rugged in outline, about half the size of an orange. It showed the most remarkable mobility in all directions except downwards. It could be easily pushed under the last rib on the right side, and be there felt with the hand. It could be pushed almost into the same position on the left side, but with greater difficulty. It could not be made to descend. Nothing else abnormal was discoverable in the abdomen. After this examination, the patient was sick several times, but brought up no blood. The urine remained normal. From this examination, Mr. Baker strongly suspected cancer about the pylorus, though it was clear that there was much room for a difference of opinion as to the nature of the tumor, and he thought it might possibly turn out to be a floating kidney. One of his colleagues suspected a collection of biliary calculi in the gall-bladder. Every preparation was made for dealing with whatever kind of tumor should be found, and especially for excision of the pylorus, should it be necessary. The stomach was washed out twice on the day before operation, and again two hours before the latter, with warm water, introduced through a long flexible tube; and no food was given afterwards. With the most scrupulous care as to antisepsis, Mr. Baker operated on January 5, 1886, under the spray. An incision was made in the middle line, from just below the ensiform cartilage to the left side of the umbilicus. When the peritoneum was opened, the tumor presented at once to view. It was then easily diagnosticated to be a mass of new growth, reaching from the anterior border of the pylorus about three inches to the left, and upwards towards the lesser curvature of the stomach. It was about the size of half an orange, flat externally underneath the serous covering of the stomach, and projecting into the narrow end of the latter. The posterior segment of the pylorus appeared sound to the touch. The tumor was perfectly non-adherent, but there were a few small hardened glands in the gastro-colic omentum. From the position of the growth and the presence of infiltrated glands, it was concluded that excision of the pylorus was contraindicated, and at once commenced the palliative operation of gastro-enterostomy, or the establishment of an artificial opening between the stomach and jejunum. After pushing the omentum, which was not voluminous, to the left, the first part of the jejunum was caught in the fingers, and a loop of it was drawn out of the incision. The middle of the anterior surface of the stomach was also drawn out, and was supported all round by warm carbolized sponges. Mr. Baker now passed a piece of the india-rubber tubing through the mesentery at each end of the loop of intestine; and, having emptied the portion of gut between by gentle pressure, drew the ends of the tubing tight enough to prevent access of the contents of the bowel into the loop to be operated on, and fixed each piece of tubing with a catch-forceps. The empty loop of gut was now laid upon the portion of the stomach to be

opened ; and a longitudinal fold of the latter, about an inch and a half from the great curvature, was pinched up between the finger and thumb of the left hand, together with the collapsed gut. An incision about an inch and a half long was now made in the fold of the stomach, and another corresponding in the approximated fold of the gut. These incisions only penetrated through the serous and muscular tunics, and left the mucous coat of both viscera intact for the present. Still holding the parts, as before, between finger and thumb, he now united the corresponding posterior edges of the wounds by a continuous suture, the needle entering and emerging in each case between mucous and muscular coats, and the threads crossing the cut edges of the muscular and serous coats. In this way, the serous surfaces were closely united from end to end before either viscus was opened. This row of stitches (which were about an eighth of an inch apart) was carried about a quarter of an inch beyond each end of the incision in the coats of the bowel. The moment had now come to open both the stomach and intestine completely ; and this was done with a stroke of a scissors through the mucous coat in each case, special sponges being ready to receive any fluid which might escape. A few drachms of *succus entericus* flowed from the bowel, little or nothing from the stomach-opening. After careful cleansing, the anterior borders of both openings were now united by a row of interrupted fine silk sutures, introduced according to Czerny's method When this was completed, the two openings were securely closed; but, as an extra precaution, the intestine was turned over, and the posterior suture was reinforced by a second row of interrupted sutures, placed about a quarter of an inch away from the first. The anterior row was then similarly reinforced by a row of continuous suture, taking up, as before, only the serous and muscular tunics. The elastic compressors were now removed from the gut. Lest there should be any "kinking" of the latter, as in one of Billroth's cases, Mr. Baker stitched its efferent portion to the stomach-wall, about three-quarters of an inch from the right extremity of the opening between the stomach and jejunum now established. The "toilet" of the peritoneum, replacement of the viscera, and closure of the external wound, completed the operation, which had lasted an hour and thirty-six minutes. The wound was dressed with salicylic wool. This mode of suturing the posterior edges of the opening before the stomach is actually opened appears to be a new departure, and offers many advantages, which are obvious.

The patient bore the operation, on the whole, well, though towards the end the pulse became a little feeble. She was warm and comfortable when removed from the table. Peptonized enemata were ordered every six hours, and only ice by the mouth. There was no marked shock noticeable when she had recovered from the anæsthetic, but she complained of pain about the abdominal wound and to the left of it internally. She soon vomited some turbid fluid, and continued to do so for a couple of days, at intervals of four or five hours, bringing up from one to two ounces each time. This was not relieved much by hypodermic injections of morphine. As the vomiting went on, the fluid brought up became more and more turbid, and then became very fetid. It clearly contained matter regurgitated into the stomach from the jejunum, appearing most like pancreatic secretion very slightly stained with bile. The eructations, which were frequent, were also fetid. Thinking all this was due to simple gravitation of the contents of the jejunum through its dependent opening into the stomach, and as there were none of the signs of peritonitis, the patient was placed in the semi-recumbent position in bed on the third day ; at the same time, she was ordered one minim of creasote every hour in half an ounce of emulsion by the mouth. Whether as the result of the change of position, or of the use of creasote, the vomiting now ceased, and did not again return until the next morning, when she vomited for the last time.

The improvement was now uninterrupted; the rectal temperature was usually below 100°. It is marked as 102° on the fourth day, but this is believed to be an error. Two hours later, it was 99.2°. On this day she was rather depressed, probably on account of menstruation having set in. The amount of brandy and beef-tea was doubled. On the fifth day she was given beef-tea by the mouth in ounce doses every hour, and on the sixth day an ounce of champagne every second hour and a tablespoonful of arrow-root. On the eleventh day she took some minced chicken, all of which was well digested. On the sixth day there were two natural stools, accompanied by a good deal of pain. On the thirteenth day Mr. Baker ordered half a drachm of confection of senna; and on the fourteenth day she complained of a good deal of pain about the descending colon, which was relieved

by a high-reaching enema, which brought away a large quantity of fæces. Her general appearance began to improve after the first week, and the sunken look under the eyes to disappear. She also became cheerful, and expressed herself as very grateful for what had been done for her. She seemed so well on the seventeenth day after operation that she was allowed to sit up in a chair for half an hour, and enjoyed it greatly.

The stitches in the abdominal wall were all removed on the ninth day, and the wound was found to have united by first intention everywhere. It was still supported by broad strips of American rubber plaster in case of straining of any kind.

That the patient has been relieved by this operation, any one who has watched her can see plainly. That the greater rest secured to the diseased stomach by its new aperture of exit directly into the commencement of the jejunum may lead to a retardation in the development of the growth, there are some grounds for hoping. The food has not now to force itself past the cancerous and ever-narrowing pylorus, but can pass easily through the new opening, and so, perhaps, that ulceration of the surface of the growth, which leads to grave complications in many cases, may be staved off. As there is no interference here with the processes of digestion, the secretions of the liver and pancreas mixing as before with the food from the stomach, that slow process of starvation, accompanied by distention of the stomach and frequent vomiting, is prevented, which often renders these cases so painful and distressing to witness; the more so because, in many cases, the process is often very slow.

It is now more than a month since the operation, and still the patient continues well. She has suffered a little from constipation on one occasion, but has been relieved by enemata, and, to prevent this trouble recurring, is now taking small doses of laxatives. She sits up every day for some hours, after being confined to bed for more than five months. Her pulse is 78, her temperature normal, her bowels acting well, and altogether she is much improved and cheerful.

NOTES ON KAWA.

The highly interesting essay of L. Lewin, the well-known Berlin pharmacologist, which was discussed in the February issue of the Gazette, has naturally aroused the curiosity of the profession to know more about this powerful and hitherto practically unknown narcotic. In a recent meeting of the Berlin Medical Society, Lewin, being interviewed on the subject, communicated some novel data on this drug, which we abstract from the *Deutsche Medizinal Zeitung* of February 1, 1886.

The active principle of kawa contains no nitrogen. Lewin recently had an opportunity to test the effects of kawa on another physician, and was struck with their intensity and promptness. If six or seven division-marks of a Pravacz syringe are injected into the subcutaneous tissues of a man, sensibility becomes reduced to such an extent that a needle pushed into the subcutaneous tissues can be moved in every possible direction without meeting with a trace of sensibility. Later, Lewin undertook similar investigations on his own person, and found that in the entire neighborhood of the point of the injection, as far as the greenish resin could be seen shining through the tissues, sensation was utterly absent for five days. This anæsthesia was so complete during the mentioned period that local irritation elicited no response at all, and even strong induction-currents caused only a slight prickling sensation.

In conclusion of his remarks, Lewin stated that the drug may be of service, also, in another direction,—viz., as a means of disguising the taste of bitter or repulsive medicines; if the kawa-resin is applied to the tongue, and then quinine in substance or solution placed upon it, no trace of the bitter taste of the latter drug can be perceived.

THE ACTION OF CERTAIN DRUGS AND POISONS ON THE HEART OF THE FISH.

Dr. T. Wesley Mills publishes in the *Canada Med. and Surg. Journ.*, March, 1886, an account of his investigations as to the action of various drugs on the heart of the fish. His experiments were made on the "toad-fish" (batracus tau). The drug was applied either in solution with a camel's-hair pencil, or simply dropped over the heart, the fish meanwhile being kept in a perfectly normal condition, bathing its gills in sea-water. That the effects witnessed were not due to indirect influence through the extrinsic nervous system of the fish was shown by isolating the heart, and treating it with the same drug or poison as the heart *in situ*. The results were always harmonious. The follow-

ing is a summary as to the conclusions to which his experiments led him:

Summary of the results of the action of Atropine and Pilocarpine.—1. Pilocarpine and atropine are antagonistic in action. The former is a cardiac depressor, tending to lower the excitability of the heart, render its action sluggish, and to stop it in diastole; the latter to improve a sluggish or weakened heart, and heighten the excitability of this organ under all circumstances. While pilocarpine tends to slow the rhythm, atropine quickens it, and increases the force of the beat. It manifests its action rapidly.

2. Atropine freely applied to the heart annihilates the possibility of arresting the heart reflexly.

Atropine applied to the conus arteriosus, arrested by a ligature between conus and ventricle, excites it to pulsation.

Summary of the results of the action of Sodium Carbonate and Potassium Carbonate.—Sod. carb. and pot. carb. are antagonistic in action on the fish's heart; the former quickens rhythm and diminishes diastolic relaxation, and heightens cardiac excitability, but is in this respect inferior to atropine. Potassium carbonate diminishes excitability, weakens the heart's action, and tends to arrest it in diastole. This agent seems to be a poison to the fish's heart.

Lactic Acid.—Lactic acid in five per cent. solution is a rapid poison, while in solution of one per cent. it depresses the heart, and gradually kills it in diastole.

Digitalin, in somewhat less than One Per Cent. Solution.—The action of digitalin may be stated thus:

1. Digitalin, when applied to a rapidly-beating heart, slows it.

2. Its invariable action, no matter what the condition of the heart, is to produce gradually increasing systolic contraction, the diastolic relaxation getting less and less till the heart is finally arrested in most pronounced systolic tetanus.

3. The peculiar action of the drug requires a short period before there is any decided manifestation of its effects; but when the latter do appear, they rapidly advance to a maximum.

4. It is not possible to stimulate a heart, brought to a stand-still by digitalin, to beat by mechanical means.

5. When the action is well pronounced, a large part of the time occupied in the systole of the ventricle is taken up in maintaining contraction when that is complete.

6. Digitalin neutralizes the action of various chemical agents, which, when applied to the heart, tend to cause undue diastolic relaxation (*e.g.*, pot. carb.).

7. A ventricle brought to a stand-still by digitalin is unusually small, hard, and pale ("tonic" contraction).

Nicotine in One Per Cent. Solution.—1. The first effect of nicotine has generally been arrest of the heart in diastole for a variable, but brief, interval; when actual arrest has not taken place, the beat has been much weakened and the rhythm slowed.

2. This condition is usually followed by irregularity and an increased rhythm, without much damage to the force of the beat.

3. The different parts of the heart may not act with their usual proportionate force or frequency. There may be two or more beats of the auricle for one of the ventricle, etc. (incoördination.)

4. The fish's heart shows a remarkable power to recover entirely from the effects of nicotine.

Veratrine in rather less than One Per Cent. Solution.—It is much more difficult to define the action of veratrine than that of digitalin, though the *eye* readily appreciates differences. In general, the beat has that sluggish appearance seen after pilocarpine is used, but in other respects veratrine is very unlike that drug in action. One of the most marked effects is the tendency to throw the parts of the heart, and even parts of the ventricle, out of harmony with each other,—*e.g.*, the central portion of the ventricle is sometimes seen to be more relaxed than the rest of it; the auricle often, after the action has lasted some time, gives several beats to one of the ventricle. It is also clear that the diastole takes place in a very sluggish way, quite unnatural to the fish's heart.

The effect on the diastole is certainly much greater than on the systole. In some phases of this action, at least, the systole is strengthened. In consequence of this effect on the diastole, the rhythm is slowed. We may put the salient points of its action thus:

The principal action of veratrine is on the diastole, which it renders more sluggish; the effect on the systole is slight, and possibly variable with the phase of action of the poison; as a consequence of its effect on the diastole, the rhythm is slowed. Want of harmony between the different parts of the heart and different fibres of the same part is liable to manifest itself.

Chloroform (*undiluted*).—Undiluted chloro-

form is a powerful cardiac depressor; that its readiest effect is on the auricle proper; that it can arrest the heart in diastole, but that this organ has considerable ability to recover from the effects of this agent.

Acetate of Strychnine in One Per Cent. Solution.—From a limited number of experiments with this poison, it appeared that it had the power to shorten the diastole and lengthen the systole, and slow the rhythm; after arrest of the heart, it was still excitable by mechanical means.

It may be stated that in an area of the ventral wall of the ventricle, extending across it from the point of junction of the auricle, a behavior, under the use of drugs, is witnessed different from that of the rest of this part of the heart. Sometimes it seems more dilated; at all events, it appears to be more susceptible to the influence of certain drugs and poisons (nicotine, chloroform, etc.) than the rest of the ventricle, but whether there is here difference in structure has not been determined. On hearts so sensitive as those found in the sharks and skates, drugs and poisons act with remarkable celerity.

URETHAN.

Dr. A. S. Myrtle writes to the *British Med. Journ.*, February 20, 1886, stating that since last October he has been using urethan in a variety of cases with satisfactory results.

He has used it in over fifty cases as a sedative and hypnotic, and his experience of its action encourages him to recommend the drug, believing that, in certain cases, it will prove of great value. The cases in which he prescribed it were of the usual run of everyday practice, where a sedative or hypnotic was required: general restlessness, sleeplessness, neuralgia, catarrh, certain forms of skin-affections with great irritation, also rheumatism and gout. Many of his patients had some peculiarity of constitution which prevented the use of opiates of the usual type; and it is in this special class that he thinks urethan will prove of great value. One gentleman, who had suffered from insomnia for weeks, and who could not tolerate opium or chloral, took 15 grains at bedtime with the most perfect result. He wrote to Dr. Myrtle and said, "The sleep caused was most pleasant and refreshing. I awoke without a head ache, with appetite for breakfast, and, what was equally agreeable, there was no interruption to any of my functions." Similar testimony has been given by the majority of patients, who have taken full doses to produce sleep. In smaller doses, its action is less marked. Still, it is decidedly calmative and agreeable, causing no unpleasant effect, such as nausea, flatulence, constipation, or headache. It does not affect the nerve-centres of circulation or respiration, but spends itself on the cerebrum. It possesses, therefore, great advantages over the older and valuable sedatives, which have certain evil influences, especially in exceptional cases. Given in gout and rheumatism, in full doses, alone or in combination, it has the great advantage over morphine of not interfering with the action of the bowels or kidneys. Besides, it is not unpleasant to the taste. The only objection to it is its price, although that has been reduced fifty per cent. in the last three months.

THE TREATMENT OF STRANGULATED HERNIA BY IRRIGATIONS OF ETHER.

Dr. Bartosz writes that for the last two years he has been applying with brilliant success irrigations of ether for the reduction of all cases of strangulated hernia which have come under his care. The irrigation is made after the method of Finkelstein (*Bull. Gén. de Thér.*, December 15, 1886), which consists in pouring on the tumor every half-hour a tablespoonful of ether, and allowing it slowly to evaporate. The hernia under such treatment disappears spontaneously, or may be readily reduced in obstinate cases by gentle taxis. In the seventeen cases in which the author states that this method served to reduce the hernia, strangulation had persisted in some only a few hours, while in others it is stated to have lasted already for several days, before the cases were subjected to treatment. The author further refers to a case of intestinal occlusion in a woman 60 years of age, in whom absolute constipation had existed for nine days, incessant fæcal vomiting and tympanites, thready pulse, etc., in whom, after a fruitless trial of all the known remedies, irrigation of ether on the entire abdominal surface in one and one-half hours caused a large evacuation of the bowels and the cure of the patient. This method of irrigation so employed by Bartosz may be replaced by driving the current of air from a bellows over the ether. Whatever, however, may be the means adopted, the ether acts by the refrigeration which its evaporation produces, and is therefore analogous to the application of ice, and

is consequently simply an improvement of the method whose value has long been recognized. We should think, however, that where the strangulation lasted for several days, as is stated by the author to have been the case in one of his instances of cure, even if the reduction of the strangulation should take place, there must be the greatest danger incurred in the return to the abdominal cavity of a knuckle of intestine which cannot but be gangrenous.

THE TREATMENT OF ACUTE INFANTILE BRONCHITIS.

At a recent meeting of the New York Academy of Medicine DR. J. LEWIS SMITH read a paper with the above title (*Medical Record*, March 6, 1886). The subject was considered under two heads: (1) mild, and (2) severe bronchitis. He believed that simple bronchitis could be aborted, or rendered milder, by an emetic employed when the first symptoms appeared. For this purpose ipecac was probably the best. Measures designed to abort the disease, however, were not usually indicated when the patients were first seen; to be employed with success they must be adopted very early.

The treatment for mild, uncomplicated, primary bronchitis was very simple. A favorite mixture of the late Dr. Jackson, of Boston, consisted of equal parts of almond oil, syrup of squills, simple syrup, and mucilage of gum arabic. Of the mixtures in the Dispensatory the mistura glycyrrhizæ composita was the best. The compound syrup of ipecac of the French Pharmacopœia was a most elegant mixture.

When the temperature was 102° F., and above, and the respiration correspondingly accelerated, he had been accustomed to use a mixture consisting of sweet spirits of nitre, syrup of ipecac, and syrup of balsam of tolu.

Severe Bronchitis.—When the inflammation involved the smaller bronchial tubes localized atelectasis was liable to occur, and also catarrhal pneumonia, which was one of the most dangerous diseases of infancy.

The indications for treatment in a severe case of bronchitis were to promote expectoration, to diminish inflammation, to strengthen the action of the heart, and prevent exhaustion.

In reference to cough there was safety in it, and he seldom added opium to any of his prescriptions which were designed to relieve cough. Although children did not expectorate, the bronchial tubes were as effectually emptied when the sputum was swallowed. To facilitate expectoration two remedies had been used largely, namely, carbonate and muriate of ammonia; the latter was preferred in most cases, except in the advanced stages, when the former might be advantageous as a stimulant.

A favorite formula for the use of muriate of ammonia with him had been muriate of ammonia, one drachm; balsam of tolu, two ounces. When there was great dyspnœa and indications for clearing the bronchial tubes of mucus, this remedy should be administered every half-hour. Dr. Smith had not witnessed any marked benefit from the use of senega or squill. To get rid of large quantities of mucus an emetic was sometimes proper.

To sustain the Patient and reduce the Fever.—He had not noticed any marked reduction of the temperature by the use of quinine, but it seemed to him that it had been useful as a heart-tonic administered in small doses. For a child one year of age, half a grain to one grain. Antipyrine might be of service, but care should be exercised in its use. In a vigorous infant, suffering from bronchitis without or with only a very slight amount of pneumonia, it might be used. Digitalis as a heart-tonic was one of the best which could be employed. Alcoholic stimulation was necessary in severe cases; two or three drops of whiskey in water, for each year of age after three months, given hourly or every second hour.

External Treatment.—Leeching and vesication have been abandoned. Slight irritation of the surface affords relief, and for this purpose he had been accustomed to use a flaxseed-poultice, first rubbing the chest with camphorated oil in young children, and using a mixture of mustard and flaxseed, one to sixteen, in older children, enveloping the chest with the poultice and covering it with oil-silk. In those cases in which there was hurried respiration, accompanied by continued moaning, to cover the chest posteriorly and anteriorly with a poultice, and over the whole place an oil-silk jacket would afford marked relief.

In robust children the application of cold to the chest during the acute stage, as recommended by Henoch, of Berlin, might be of more service than poultices. For all infants under six months of age, however, poultices were preferable.

Change in position of the child he regarded as a most important element in the treatment,

laying the child first upon one side and then upon the other, and upon the back.

The chairman invited DR. A. JACOBI to open the discussion, who said that whenever Dr. Smith read a paper very little, if anything, remained to be said. There were some points which he would like to impress upon those present who had not seen a great amount of practice, and who would doubtless see more of these cases hereafter. One of the principal points to which allusion had been made, and of which he wished to speak, was the use of *opium* in these cases. We could not do well without opium in many of them, because there was so much irritation; but he would emphasize the necessity of giving as little as possible. If it was to be given at all, give a good-sized dose at night, for the purpose of securing a number of hours of sleep. He would express his conviction that in no small number of cases of capillary bronchitis and acute pneumonia in adults, the patients died in part of their disease, in part of the influence of opium. Certainly opium would suppress expectoration, and without expectoration bronchitis and pneumonia were almost invariably fatal.

There was one great expectorant which Dr. Smith had not mentioned, and that was *water*. Where was the expectoration to come from unless there was fluid in the body? It was all well enough to give muriate of ammonia and expect it to liquefy the expectoration; but the liquefaction could not take place without plenty of water, and the chief danger was that water was not supplied in sufficient quantities to young infants, older children being able to ask for it.

Another important point was the regulation of the temperature and moisture of the atmosphere in the room; this is especially important in all cases of so-called dry bronchitis.

With reference to the use of *digitalis*, he believed that two or three large doses in twenty-four hours were preferable to small doses frequently repeated. A child one year of age would take one grain of digitalis three times a day, for as many days as would be required, and the effect would be much better than if the remedy was used as it was usually employed.

Another exceedingly valuable expectorant was *camphor*, the effect of which was permanent, and it was more easily taken than carbonate of ammonia. A child one year of age might take one-quarter, one-half, or even one grain of camphor, rubbed up with glycerin as often as every hour or every two hours, and in bad cases of bronchitis or pneumonia, where expectoration was wanted, he had not seen any expectorant which had served him a better purpose.

Turpentine, also, by inhalation, was an excellent expectorant. Put a tablespoonful or two tablespoonfuls of spirits of turpentine into the kettle of water which is kept in the room to moisten the atmosphere, and the air will be impregnated with the vapor of turpentine, which will greatly benefit the patient.

DR. JOHN C. PETERS was asked to continue the discussion, and said that one remedy, which was the best of all expectorants, and which allayed the cough, had not been mentioned, and that was potassium. The form in which he usually prescribed it was the liquor potassæ, one drachm to four ounces of water, and he very frequently used anise-seed water, which of itself was somewhat soothing. All of the alkalies, but more particularly potash, increased the ciliary movement of the bronchial epithelia, the only way in which expectoration was brought forward where it could be reached by cough. Besides, a solution of potassium would dissolve mucin, while simple water would not. He had almost abandoned the use of ipecac, except perhaps in small tonic doses. When there was great congestion and dyspnœa the administration of small doses of calomel, sufficiently large, however, to move the bowels, would relieve the heart and lungs, and render *digitalis* more active than it otherwise would be.

With reference to external treatment, he had used flannel chiefly, perhaps covering the chest with cotton. He thought that the frequent changing of poultices exposed the infant too much.

With reference to change of position, he had been in the habit of placing the child on the face, and had found it very beneficial.

He never used quinine as an antipyretic, but thought it beneficial in preventing the migration of leucocytes.

DR. JOSEPH E. WINTERS said that while, perhaps, acute bronchitis could not be aborted, the inflammation certainly could be minimized. During the time when the congestion was limited to the bronchial artery, remedies which reduced the force and frequency of the heart's action would reduce the inflammation, and for this purpose he employed veratrum viride, already mentioned by Dr. Ripley, or aconite; as a reliable article of veratrum viride was somewhat difficult to obtain, he frequently used the latter agent. This ex-

pectation, however, was realized only in cases of acute primary bronchitis.

After this his method of treatment was to use derivatives, and then mild cathartics, consisting chiefly of alkaline mixtures.

The second indication was to prevent accumulation of catarrhal secretion, as here occurred all the deaths. For the prevention of the accumulation of this secretion he used stimulating expectorants, and they varied according as to whether the expectoration was thin or viscid. In this condition cough also became remedial. During the catarrhal stage he combined camphor with other agents in a sufficiently concentrated form to excite a cough, which would, in part, be voluntary. Besides, he applied stimulating liniments to the surface of the chest, which would provoke deep inspiration. For this reason he thought that large poultices were dangerous, and that putting a pound of flaxseed, mixed with water, upon the chest of a child one year of age, would materially interfere with respiration. He preferred the oil-silk jacket, or, perhaps, spongiopylin, with cotton batting and oil-silk. The oil-silk was generally sufficient, with the use of a stimulating liniment, applied by putting the hand under the jacket, without exposing the chest of the child at all. He always insisted upon the following order in most of these cases: First, make the external application, then administer the expectorant, which would excite a cough, and then administer an emetic, and do all this at bedtime.

Opium became a dangerous remedy in young children, and he thought chloral did equally as well. When the secretion was watery and excessive, camphorated tincture of opium might diminish cough and secure rest, but it was not often indicated.

As to whether capillary bronchitis existed independently of broncho-pneumonia, he had his doubts, because when capillary bronchitis was found at autopsy it was associated with more or less of broncho-pneumonia.

Dr. H. D. Chapin made special reference to the use of bromide of sodium, which he had used with good results. The use of opium had been pretty well condemned by the speakers by whom he had been preceded; and even in the doses recommended he had seen, it seemed to him, unfortunate results due to its use. In rachitic children he had noticed a more rapid and a more marked narcotic action produced by opium than in otherwise healthy children. In one case he felt quite certain that the brown mixture, regarded as perfectly safe in ordinary cases, nearly caused the death of his patient. For some time, therefore, he had used the bromide of sodium, and although it did not act rapidly, yet, by giving it continuously, it produced a sedative effect, which had seemed to him to be safe and beneficial. He would be more afraid to use chloral than opium.

With reference to cases of mild bronchitis, he thought one of the best remedies was to put the child to bed at the outset, and when this was done the large majority of children would get well without special treatment.

Dr. J. H. Fruitnight spoke of the use of iodide of potassium in the second stage of the disease, especially when the secretion was viscid, administered in doses of one-fourth to two grains, according to the age of the child. He favored the use of oil of turpentine combined with balsam of fir.

ON PARTHENIUM HYSTEROPHORUS.

Dr. Ulrici publishes a brief note on this plant, a native of Cuba, in the *Deutsche Medicinische Wochenschrift* of February 8, 1886, from which we abstract the salient points. The plant is in its home called escoba amarga, or confitilla, and has been in use with the natives as a febrifuge since time immemorial. It contains an alkaloid,—parthenine,—and, besides, four other alkaloids, and the non-crystallizable parthenic acid. Parthenine is crystallizable, and represents the active principle of the plant. One and a half grains of this alkaloid brought on the tongue in a watery solution produces a quickly-disappearing bitter taste and an increased salivation. One-fifth to one grain causes a sensation of warmth in the stomach and an increase of the digestive power. In doses of 3 grains the alkaloid quickens, and in 15-grain doses slows, cardiac action. The arterial pressure and respiratory frequency sink likewise after larger doses. The temperature of a healthy person is not affected by doses below 7 grains; 50 grains given in two doses cause a small reduction of temperature. The urinary secretion remains unaltered under the influence of the drug. Several trials with parthenine go to show that this alkaloid possesses some anti-neuralgic value.

THE TREATMENT OF PAINFUL FISSURE OF THE ANUS WITHOUT OPERATION.

The two plans of treatment generally recommended as the only reliable ones for the treatment of anal fissure are incision or

stretching of the sphincter muscle. As a rule, perhaps, stretching may be preferred, as it causes no external wound, and therefore does not render the patient liable to septic poisoning. MR. A. D. MACGREGOR (*Brit. Med. Journ.*, February 27, 1886) treats such fissures without any operative interference at all, and he claims that his success is such as to warrant a continuance of his method. His plan is first to order a full dose of castor oil with some rhubarb; when this has well operated the bowel is to be washed out with an enema of Condy's fluid. After passing the speculum, the fissure is then to be painted with a solution of chloride of zinc, twenty grains to the ounce, and a piece of lint smeared with boric ointment then introduced, the contraction of the sphincter serving to keep the lint in contact with the sore. The bowels are kept closed by opium, and liquid food only allowed. The subsequent treatment consists in the use of powdered boric acid half a drachm and violet powder one ounce, sprinkled freely on lint, and introduced into the anus to dry up any discharge. Mr. Macgregor states that one application of chloride of zinc in his experience has always proved sufficient, and only causes some smarting and uneasiness.

RESPIRATORY THERAPEUTICS.

There is an evident tendency, especially among continental physicians, to react against the system of endeavoring to treat affections of the respiratory organs exclusively by means of medicinal agents, which act on the system at large. It is beginning to be recognized that many, if not most, of these affections are local in their origin and in their course, until indeed the maintenance of life itself is menaced by the acquired incapacity of one important organ. The sooner this view of the pathology of lung-diseases is recognized, the better will it be for the comfort, if not for the cure, of the patient. We may even go a step further, and maintain that, even in lung-affections where the constitutional condition is not without importance, either in their etiology or in their course, much relief may be obtained and improvement effected by a judicious resort to the means which modern therapeutic research and ingenuity have placed at our command.

The truth of what we have advanced is already partially admitted by the profession and by the public, in the limited applications of remedies in the form of vapors or sprays; but this method of treatment merits, and will doubtless obtain, a more thorough employment as a knowledge of its advantages becomes more general. Mechanical difficulties have long stood in the way of the more extensive adoption of the method of direct application to the irritated or inflamed mucous membrane of the respiratory tract; but this can now no longer be alleged as a sufficient reason for its non-employment. That it involves more trouble, and especially more direct supervision on the part of the medical attendant, is not to be denied: but that this increased trouble should be deemed an adequate objection to its administration, can scarcely be allowed. A recent contribution by Dr. Murrell on the subject of pure terebene as an inhalation, shows that the value of such applications is gradually becoming appreciated in this country.

The resources of this branch of therapeutics are more extensive than one is apt to imagine. Not only can constitutional effects be readily and promptly induced when desired, but drugs can be inhaled in the form of a vapor, or in solution as a spray, or in the solid form as an impalpable powder. By these means any desired effect can be produced, anodyne or expectorant, soothing or astringent, or antiseptic; all can readily be directed immediately on to the affected surface, and their beneficial results promptly and certainly obtained. Nor is this all. Thermic therapeutics have been resorted to ever since the days of Hippocrates as an adjunct to the more ordinary methods. By means of variations in the temperature of the inspired air, the characteristic effects frequently utilized in what we may call external medication may be made to exercise their influence here, and there can be no reason to doubt their efficacy in this case as elsewhere. Then, again, modifications in the composition of the inspired air may be and have been turned to account. The inhalation of a more highly oxygenated atmosphere, or of one more rich in that active form of oxygen, ozone, has during the present century been largely experimented with; and, even if the results have not come up to the somewhat extravagant hopes entertained when Priestley first discovered and promulgated the novel and curious qualities of this gas, enough has been observed and recorded of its influence to justify one in hoping for its further employment in the future.

The most modern addition to this department of therapeutics is perhaps the mechani-

cal treatment of certain affections of the respiratory tract by means of alterations in the pressure of the air. The various apparatus, designed with this object in view, comprise quite an arsenal, from the complicated inventions of Finkler and Koch to the simple accordeon-bellows of Fränkel. On a more elaborate plan, the pneumatic chambers are available, and have been in operation for some years with, it is alleged, eminently beneficial results in a restricted class of cases. We are all of us familiar with the advantages attending a change of air with certain patients and in certain maladies; and it cannot be doubted that much of the good so obtained is attributable partly to the change in atmospheric pressure, in combination with variations in the hygroscopic and electric properties of the respired air. What has been done of late has been with a view of conducting the treatment on a scientific basis, whereby, with careful observation, the credit due to the various factors of pressure, temperature, and composition can be more accurately determined, and long, expensive, and unnecessary voyages rendered to a large extent superfluous.

The methods of inspiring compressed air or expiring into compressed air have given especially good results in certain cases. The effect of the former is obviously to raise the tension of the air in the lungs, thereby facilitating and accelerating the interchange of gases. The expansion of the thorax is perceptibly increased even in a healthy subject; and, where the lung is bound down by false membrane, or is otherwise prevented from complete inflation, the increase in its vital capacity is as rapid as it is marked. Patients suffering from asthma, chronic bronchitis, bronchorrhœa, or emphysema, often experience great relief from even a single application. The increase of pressure need not and ought not to be very great. From one-sixtieth to one-thirtieth of an atmosphere is that most generally employed.

It is to be regretted that in this country no facilities exist for systematic treatment of this kind, beyond one or two special institutions; and in this respect we are much behind our continental brethren. In Germany and France the treatment is in full swing, and is said to be attended with much benefit in those cases where its employment is indicated. In a country like ours, where bronchial affections form a large and distressing proportion of our troubles, it is singularly inappropriate that fresh means and appliances for treatment should be left comparatively untried.—*Brit. Med. Journ.*, March 6, 1886.

MANAGEMENT OF BREECH PRESENTATIONS.

At a recent meeting of the New York Academy of Medicine Dr. Robert A. Murray read a paper with the above title (*N. Y. Med. Journ.*, March 13, 1886), which dealt principally with the measures necessary to be taken to deliver in breech cases and to diminish the percentage of mortality. The importance of an effort in this direction was apparent from the fact that the statistics quoted from authorities gave a mortality in breech presentations of about one in eight and a half cases. Among the causes of this class of presentations were a contracted pelvis, an excessive amount of liquor amnii, violent movements, and a peculiar formation of the lower segment of the uterus. It was also remarkable what a large proportion of the cases occurred in premature labor and multiple pregnancy. The statistics of Simpson went to show how frequently, the child being dead, the loss of tonicity of the spine and the presence of flaccidity in the tissues caused malpresentations; those tables demonstrated that there was a constant tendency after the sixth month of pregnancy for the head to present.

In a case of breech presentation in which the mother's pelvis was of full size and regular form, and the child of moderate proportions, labor would probably be accomplished without particular difficulty, and the obstetrician had only to wait. If, however, the indications were that the labor would be difficult, if the pelvic cavity was not roomy, or the child of large proportions, version, if it was to be performed, should be done early, before the rupture of the bag of waters. If the case was allowed to progress, no obstruction being met with, the critical moment for the child would be just after the birth of the trunk and lower extremities, for now the cord was in danger of becoming compressed between the unyielding head and the pelvic wall. The cord should be pulled down and placed next the sacro-iliac synchondrosis by the side of the child's head, where it would be least likely to become compressed. The contractions of the uterus might be followed up by the hand, and flexion of the head might be aided by raising the trunk of the child. But in cases in which the limbs were extended upward over the front of the child, so that the toes were near the face, the breech was not nearly so large as the child's

head, and, being readily moulded, entered the pelvic cavity; the entire fœtus then presented, as Barnes had well described, the form of a wedge with the base upward. Now, if traction was made by means of hooks, fillet, or forceps, and unsuccessfully, as it was likely to be, the apex would be dragged into the pelvis, and, the cavity becoming more tightly filled, compression of the cord would be increased, and the uterus rendered more irritable, and here the only measure for the safety of the mother and child was to bring down a foot. The use of the blunt hook to do this was difficult, as it was apt to slip and injure the soft parts or cause fracture of the thigh; consequently, if the child was living, it should not be resorted to. The fillet, if it could be guided over the limb, might cut the tissues or prove too weak to overcome the difficulty. The obstetric forceps had been recommended in these cases, but it was condemned by most authorities. It was only adapted for use on the head. The performance of cephalic version, as recommended by Spiegelberg, would be possible only before rupture of the bag of waters and before the breech became wedged.

The clear indication in such a case was to break up or decompose the obstructing wedge, which was to be done by bringing down one foot. The position of the breech in relation to the pelvis having been determined by ordinary diagnostic points, the hand was to be passed in front of the breech where the foot lay, and one foot seized by the instep and brought down; then the breech would probably soon descend. The cord would be better protected than if both feet were brought down. The foot nearest the pubes was most easily drawn down. If the case was not otherwise complicated, the labor would now go on naturally. If the breech filled the brim, or was forced into the pelvic cavity, little space would be left for the operator's hand, and under these circumstances the hand would have to be passed up to the fundus uteri in order to grasp the foot. That hand should be introduced whose palm would touch the abdomen of the child when introduced. When the foot was reached, preferably the anterior one, it was to be seized by the instep and drawn down out of the vulva. It was essential to get hold of the foot; taking hold of the knee, or hooking the thigh in the groin, would be of no use. During the operation the uterus should be supported by the other hand or by an assistant. If inertia uteri should now exist, we should still have attained, by our hold on the foot, security for further progress of the case.

The operation of extraction by the breech might be divided into: 1. Drawing the trunk through the pelvis. 2. Liberation of the arms. 3. Extraction of the head. Traction on the leg should be carefully made, in drawing the trunk down, coincidently with the pains. The trunk should be drawn downward and backward in the axis of the brim, external pressure being made by an assistant, the traction being kept up until the breech was fairly in the pelvic cavity. After the extraction of the breech, the cord should be carefully looked after. Liberation of the arms might become necessary if the pelvis was at all contracted, or if traction upon the trunk had been too rapid, or had not been accompanied by external pressure on the uterus.

The head being at the brim, Smellie's method might be employed in the manner recommended by Schröder, or the method of Scanzoni. In all cases of breech presentation the forceps should be at hand ready for application to the head if it should be necessary. Particular care should be taken during its introduction not to lacerate the cervix. Passing a catheter up into the mouth of the child at this stage would frequently save life.

The subject of the management of breech presentations had been brought to the author's mind forcibly during the past year from the number of cases which he had seen in consultation, in nearly all of which he had found difficulty arising from flexion of the legs on the abdomen, diminishing the size of the breech to a certain extent, and at the same time forming a wedge that became more tightly impacted as the child descended. In all of these cases unsuccessful efforts had been made to extract before he was called, and he was impressed with the advantage of introducing the hand and bringing down the foot over other methods, such as the use of the forceps, the blunt hook, the fillet, etc.

ARTIFICIAL ANÆSTHESIA WITHOUT SLEEP AND RETENTION OF INTELLIGENCE, MOTION, AND SENSIBILITY.

In the *Centralblatt für Chirurgie* of February 20, 1886, we find an interesting account by BROWN-SÉQUARD of a novel form of anæsthesia, which he has established by experiments on animals and on man. The author published some years ago a remarkable observation of his, viz., that by irritation of the

laryngeal mucous membrane he could eliminate to a more or less degree all sensation of pain from all parts of the body. This remarkable effect is brought about by an inhibition exerted by the superior laryngeal nerves upon the nerve-centres, and can be limited almost exactly to one-half of the body. Since that time Brown-Séquard instituted numerous experiments on man and animals. In nine monkeys and forty-three dogs the experimenter could produce analgesia without sleep, after the opening of the trachea, by means of carbolic acid, chloroform, or sub-respiratory intramucous injections of cocaine. Especially striking was the effect of an irritation of the mucous membrane of the larynx and neighboring parts, such as the trachea and pneumogastric nerve above the branching off of the superior laryngeal nerve. Other modes of producing an irritation on the mentioned region were also tried, but proved less efficient. Among these the author mentions the following: galvanization of the superior laryngeal nerve or of the larynx, cauterization of the laryngeal mucous membrane by nitrate of silver, hydrate of chloral or other caustics, kneading of the larynx, introduction of a catheter into the laryngeal channel, and division of the trachea or of the integument of the neck in front and on the sides. After the cutting of the integument of the neck the experimenter did not, as a rule, observe general anæsthesia, but noted the same to radiate from the wound over the entire neck down to the ends of the shoulder-blades. This fact suggested to Brown-Séquard the possibility of successfully combating the epileptiform affections of various animals originating in this zone.

The wounds themselves remain insensible up to the time of cicatrization, and in the animals experimented upon, large nerve-trunks can be cut and deep cauterization or galvanization be performed without eliciting any expression of pain. Still, in the majority of cases the analgesia produced in the stated manner extended only over the superficial parts of the body, though its duration was generally from fifteen to twenty hours. The sense of touch and the muscular power remained likewise intact.

It is clear that this method of causing anæsthesia can find but a limited and imperfect application in man. Brown-Séquard indeed made some very interesting experiments in this field which may possibly, at some future time, lead to more definite and available results. He exposed the person to be experimented upon for two-thirds or three-fourths of an inspiration to pure air and for the remaining one-third or one-fourth to carbonic acid gas, which, however, was at once again expired. Neither this gas nor chloroform should enter the lungs, lest the analgesic influence of the superior laryngeal nerves upon the nerve-centres be removed. These inhalations had to be continued in man for twenty minutes in order to obtain the three peculiarities of this kind of narcosis, viz.: 1, A complete analgesia of the skin, lasting for forty hours; 2, a cessation of various kinds of pains for the period of two days; 3, a perfect absence of the sensation of fatigue.

Brown-Séquard concludes that it is possible by an irritation of the laryngeal mucous membrane in man and animals to decrease or even abolish the sensation of pain without interference with the intelligence, the senses, and the voluntary movement.

THE RELATIONSHIP OF THE FORMATION OF UREA AND URIC ACID TO THE SECRETION OF BILE.

Dr. D. Noel Paton publishes in the *Brit. Med. Journ.* for March 6, 1886, the following summary of an elaborate series of experiments which he made in the physiological laboratory of the University of Edinburgh in order to determine the relationship as to the formation of urea and of uric acid to the secretion of bile.

1. *Salicylate of Sodium.*—(A) *In man.* In dose of 0.106 gramme per kilogramme, salicylate of sodium causes no change in the amount of water passed, a slight increase in the urea, and a very marked diminution in the uric acid excreted. This last change is by far the most manifest; in one experiment the diminution was as great as 64 per cent. (B) *In dogs.* In doses of from 0.45 gramme to 0.6 gramme per kilogramme, salicylate of sodium caused a marked diminution in the water passed, a rise in the urea, and a great diminution in the uric acid excreted.

2. *Benzoate of Sodium*, in doses of from 0.51 to 0.58 gramme per kilogramme, causes little or no change in the amount of water. The urea is greatly increased, and the uric acid is diminished, though not so markedly as with salicylate of sodium.

3. *Colchicum*, in doses of 0.02 to 0.037 gramme per kilogramme of the acetic extract (*B.P.*), causes a very marked increase in the urea and uric acid. When the doses are

small, the water is also increased; but, with large doses, the water secreted may actually fall, while neither the urea nor the uric acid are so markedly increased as with smaller doses.

4. *Perchloride of Mercury*, in doses of from 0.0015 to 0.0075 gramme per kilogramme, causes an increase in the excretion of water, urea, and uric acid.

5. *Euonymin*, in doses of from 0.04 to 0.10 gramme per kilogramme, causes a slight increase in the water excreted, a very marked increase in the urea and uric acid. In larger doses, 0.16 gramme per kilogramme, it causes purging, with no diminution in the water passed by the kidneys, but without the marked rise in the urea excreted.

It is thus seen that, in dogs in a condition of nitrogenous balance, stimulation of the flow of bile by means of these drugs is accompanied by an increased production of urea. That an increased production, and not merely an increased excretion of urea, occurs, is clearly shown by the fact that, after the administration of the drug was stopped, the amount of urea merely returned to the normal, and did not manifest a fall corresponding to the initial rise.

Dr. Paton therefore concludes that the formation of urea in the liver bears a very direct relationship to the secretion of bile by that organ. On the nature of this relationship he has not touched in the present paper; but at an early date he hopes to give the results of a series of experiments upon this subject.

To the physician, the results of these observations must have considerable interest, especially of those which, dealing with the influence of salicylates and benzoates upon the excretion of uric acid, afford a key to their mode of action in gout. No less interesting is the demonstration of the fact that colchicum increases, and does not diminish, the production of uric acid.

SALICYLATE OF SODIUM IN IRITIS.

At the meeting of the Baltimore Academy of Medicine, held February 16, 1886, Dr. Samuel Theobald (*Maryland Med. Journ.*, March 6, 1886) referred to some interesting results he had recently obtained by the use of salicylate of sodium in iritis, occurring in patients with a history of inflammatory rheumatism.

Three weeks ago a young lady had called to see him. She had a most intense plastic iritis, pupil perfectly immovable. She had only perception of light, and could not count fingers at the ordinary distance. She was ordered sodium salicylate, and in a few days she obtained much relief. This salt was then withdrawn and iodide of iron ordered. She did well until the end of several days, when she reappeared, complaining of the same trouble, which increased in intensity until, at the end of two days, she was in the same condition as originally. The salicylate was repeated, as well as the atropine drops locally, and mercurial inunctions to temples. Cathartics were ordered, and in *two days* she was so very much improved that vision equalled $\frac{20}{64}$, and the media sufficiently clear to permit satisfactory inspection of the optic disk.

She had had some glaucomatous tension, but this did not prevent his ordering atropine, nor interfere with the physiological and therapeutical action of the drug.

A NEW METHOD FOR ANÆSTHETIZING THE UNINJURED SKIN WITH COCAINE.

Dr. Wagner, at the meeting of the Society of Physicians at Vienna, held February 5, 1886, described a method by which the uninjured epidermis might be rendered anæsthetic through the application of cocaine. For this purpose he made use of the property of a galvanic current discovered by Dr. Haertner, in consequence of which fluids move from the positive to the negative pole. If the positive electrode is dipped in a cocaine solution, and placed upon the skin, and the negative pole placed a short distance from it, and a current allowed to pass, the skin lying between these two points of application of the electrode becomes anæsthetic. Wagner made a number of experiments to determine the value of this method to surgical practice in the clinic of Prof. Billroth, and found that by the means of this such anæsthesia as would prevent the appreciation of incisions of the skin was readily attainable.—*Wien. Med. Blatt.*, February 11, 1886.

THE RADICAL CURE OF HYDROCELE.

At a recent meeting of the Academy of Medicine in Ireland, Mr. McArdle read a paper on the radical cure of hydrocele. After describing the methods of Volkmann, Julliard, and Bergmann, he read the notes of three cases illustrating the method of incision (*Medical Press*, March 10, 1886). He brought forward specimens to show the ease with which the tunica vaginalis could be removed in the

operation for excision. He then compared the methods of injection and dissection chiefly as regards—1st, the relative difficulties of the operative procedures; 2d, the dangers attending each; 3d, the length of time required for cure; and, 4th, the chances of return after each method. In reference to the third point he called attention to the following as the dates of healing. After

Injection.	Incision.	Excision.
Billroth.....9th	Volkmann. 8th–10th	Julliard..... 10th
Stolz.....9–10th	Küster..... 14th	Bergmann., 11–12th
Weiss.....8–9th	Lister..... 17th	

The chances of recurrence in various methods he stated as follows:

Injection.	
Cases.	Recurrences.
315	41
Incision.	
238	5
Excision.	
72	0

The percentage of recurrences after injection of different substances seemed to be very much the same. After iodine, fifteen per cent.; chloral hydrate, thirteen per cent.; perchloride of iron, eleven per cent.; carbolic acid, ten per cent.; and chloroform, ten per cent. Mr. McArdle recommended the dissection method in—1st, multilocular hydrocele; 2d, hydrocele connected with tubercular testis; 3d, cases complicated by mucoid transformation of the cellular tissue of the scrotum; 4th, cases where injection of ordinary hydrocele failed more than once; and, 5th, those cases of hydrocele in which the tunica vaginalis becomes greatly thickened, coated with chalky deposit, or filled with foreign bodies.

In the discussion which followed, Mr. Stokes said he could not, in his own practice, recall a single instance of failure in the radical cure of hydrocele by what Mr. McArdle termed the old method of injection, although, however, some of his cases had been injected more than once. In none of the cases was there any serious trouble, such as fever, sloughing of the scrotum, erysipelas, etc., therefore he was not supposed to alter his method of treatment for one more hazardous. He had seen Volkmann's treatment by incision, and one of the most important points connected with it had not been mentioned,—namely, that, having incised the tunica vaginalis, and attached the edges with great accuracy to the edges of the skin by continuous sutures, a series of deep sutures were applied to keep the surfaces in apposition. He had seen serious consequences follow the operation,—for instance, retention of urine and fever. Another objection was the difficulty of keeping on antiseptic dressings, and there was also that of preventing the sutures ulcerating through the tissues of the scrotum. While there were all these difficulties and dangers attending the treatment proposed, it was obvious that the old and simple method of using some of the preparations of iodine was the one that in the majority of cases was to be preferred.

Mr. Barton said the question was one of choice between the operations which admittedly had certain risks and the well-established procedure which was without any serious risk. He was therefore gratified that Mr. McArdle had recommended those operations for the treatment of hydrocele only in difficult cases which had resisted injection. That limited materially the scope of the recommendation. His own experience was, like Mr. Stokes's, that he could not recollect a single case in which the injection plan had failed to produce a cure, nor one in which it had produced dangerous symptoms. There was occasionally delay experienced, but ultimately, with care, those cases were also successful. Therefore he did not see any necessity for the operations recommended. He could, however, imagine complicated cases in which some other means than injection must be tried; but such cases were very few, having regard to the fact that surgeons of experience had not met any. On the other hand, the treatment of injection by iodine was the outcome of many years' surgical experience.

THE TREATMENT OF CERTAIN FORMS OF TYPHOID FEVER BY INJECTION OF ERGOTIN.

Dr. Emile de Mange has recently published a paper on a mode of treatment which he claims renders great service in the treatment of certain forms of typhoid fever (*Journ. de Méd.*, January, 1886). Often, when a typhoid fever patient has reached the end of the second week, the temperature will oscillate around 40° C., with scarcely any morning remission, pronounced ataxia will be present with delirium and agitation. The pulse, above 120°, becomes small, compressible, and weak; the movements of the heart are quick and weak, and the heart-sounds, especially the first, are feeble; pulmonary hypostasis is marked; the extremities become cyanosed, livid, and cold; irregularity of the pulse becomes more and more marked, and syncope and impending death is evident. In such a case De Mange

first employed the subcutaneous injection of 15 grains of ergotin. Ten minutes later the pulse, which was thready and scarcely perceptible, had increased considerably in strength and volume. A second injection was made six hours later, and again during the night following, when it appeared that the pulse was a second time becoming feeble. From this moment convalescence set in, and, although complicated by an intercurrent pleurisy, terminated in a complete cure. De Mange explains the influence of ergotin in such a case by claiming that the symptoms on the side of the vascular apparatus are due to some disturbed cardiac and vascular innervation, and therefore ergot, by increasing the arterial tension, is indicated. He, therefore, thinks that ergotin should be administered in what he terms the cardiac form of typhoid fever, or, in other words, cases characterized by excessive acceleration of the pulse and weakening of the arterial tension.

A CASE OF THORACIC ANEURISM TREATED BY THE INTRODUCTION OF STEEL WIRE INTO THE SAC.

At the meeting of the Royal Medical and Chirurgical Society held February 23, 1886, Dr. W. Cayley (*Brit. Med. Journ.*, February 27, 1886) read an account of a man who was admitted into the Middlesex Hospital who had suffered from symptoms of a thoracic aneurism since November, 1884, but it was not until five days before his admission that a pulsating tumor made its appearance at the root of the neck, rising about three inches into the neck behind the right sterno-clavicular articulation.

The patient was at first treated according to Tufnell's method, and given large doses of iodide of potassium. The tumor continued to increase in size, and it was evident that it must either soon burst externally or extravasate among the tissues of the neck. On June 24, Mr. Hulke introduced into the sac, through a fine canula, forty feet of steel wire. This caused no constitutional disturbance or local pain, and this portion of the aneurism became completely consolidated. Towards the middle of August, signs of the extension of the intrathoracic portion of the aneurism—increasing dyspnœa and severe paroxysmal cough—became more marked, and there was an increase of pulsation behind the sternum and towards the left sterno-clavicular articulation. As it was evident that the aneurism must soon prove fatal from pressure on the trachea, it was determined to endeavor to consolidate the part of the sac producing this pressure. Accordingly, on September 10, Mr. Gould, in the absence of Mr. Hulke, introduced a canula just above the left sterno-clavicular articulation, directing the instrument obliquely towards the middle line, and introduced thirty-four feet nine inches of wire. No constitutional disturbance followed, but no relief was given to the symptoms, and the patient died in a paroxysm of dyspnœa on September 19. On post-mortem examination, a large aneurism was found springing from the ascending part of the arch, and communicating with the vessel by a very large orifice; the whole of the upper portion was completely filled by a clot, embedded in which was the wire. The wall of the aneurismal sac, where it projected into the neck, consisted only of a little condensed connective tissue. The lower portion of the sac, near its origin from the aorta, caused compression and flattening of the trachea just above its bifurcation. The first operation produced the desired result in preventing the imminent rupture of the aneurism. The size and connections of the sac rendered the second operation ineffectual.

THE "DRY TREATMENT" FOR UTERINE DISORDERS.

In a paper read before the St. Louis Obstetrical and Gynæcological Society, Dr. George J. Engelmann brings forward what he terms a new departure in uterine therapeutics. Preliminary to a description of his own methods, Dr. Engelmann gives an interesting sketch, showing the national peculiarities of gynæcologists, so far as topical therapeutics is concerned. "In Germany," he says, for instance, "at one time the washing of cervix and vagina with strong solutions was an almost universal practice; in many clinics it was customary, whether other treatment was applied or not, to wash cervix and vagina with strong solutions of sulphate of copper, or carbolic acid, through the Ferguson speculum. In France —I am only speaking of methods which are not used here—they use the cautery, and medicated supports to the uterus; the thermocautery also is a specialty in French gynæcology; a common usage is to apply a remedy in a small semicircular bag made of muslin or mosquito-bar, which at the same time serves as a support for the uterus. This country is peculiar in its use of nitrate of silver and iodine, though in England it is used in a similar way, but by no means as freely and as commonly as here."

Dr. Engelmann's new departure consists essentially in the use of medicated absorbent cottons, with or without the addition of a powder-blower or gelatin pencils. The medicated tampons have the advantage, we are told, of giving support to the uterus, of acting continuously and evenly, and of being cleanly. The tampons may also be made of jute, and perhaps the best combination is a medicated jute tampon covered with a layer of the softer cotton. The powders used are those of alum, bismuth, tannin, salicylic acid, iodoform, and zinc. Next after these in value are the gelatin or iodoform pencils. The cotton or jute used is medicated with iron, boracic acid, alum, tannin, iodine, and other substances.

By the use of the powders or pencils and tampons, in endocervicitis, erosions, and other chronic uterine troubles the profuse discharge is often checked very promptly, and a healing process set in action. Dr. Engelmann does not recommend the glycerin tampons which are considerably used in New York. His "new treatment," though a good one, is not, we venture to say, very new; something very much like it—*i.e.*, the use of powder and cotton tampons—was, we believe, at one time quite the routine practice in Vienna. In New York also cotton tampons medicated with alum and other powders have been used for six or more years.—*Medical Record*, March 20, 1886.

ON RESORCIN IN THE TREATMENT OF ECZEMA.

There are few diseases for which such a number of various methods of treatment have been proposed as for eczema. The multitude of remedies praised as a cure for diseases of the skin is often embarrassing to the physician, who expects to find the same simplicity in the therapeutics of skin-affections as is established in the general practice. In the absence of any universally recognized treatment of eczema, the proposition of any remedy whose physiological and chemico-physical properties are suitable for the affection may claim our attention.

In the *Fortschritt* of January 5, 1886, Dr. A. Wyss publishes an essay intended to demonstrate the efficacy of resorcin in eczema. We abstract from this paper the main points of interest.

In the treatment of eczema two principal questions present themselves for consideration: 1, Is the eczema acute or chronic; and, 2, with which period of the affection have we to deal? These questions ought not be answered only for each patient particularly, but also for each localization of eczema on the same individual. On one surface of the body, the eczema may have attained its period of desquamation, while on another the affection may still be in its papular phase. The remedies employed in chronic eczema would often have a disastrous effect if applied in acute eczema. In one word, strict individualization is an indispensable requisite with every case of eczema.

In the acute form of eczema the employment of directly healing applications is useless and better avoided. "To do nothing," says Rayer, "is the best treatment of acute eczema." All irritant measures, such as washes of cold water, are especially detrimental. Subjective symptoms, such as pain and itching, may of course receive a special medication by powders or alcoholic lotions, with the additions of camphor, phenic acid, chloral, menthol, and cocaine.

If there is any discharge, desiccant powders form an eligible application.

The period of desiccation calls for emollients, such as oil, glycerin, and pomades. One of the most frequently exhibited pomades is Wilson's preparation, which has the following composition:

℞ Benzoës pulv., gr. 75;
Adip. suilli, ℥iv.;
Digere, cola et adde
Zinci oxydati, ℥iii. M.
F. Unguentum.

In the chronic form of eczema the following indications are to be fulfilled: 1, To detach the scales and crusts which surround the affected parts; 2, to dry up such parts as are still moist; 3, to remove the infiltration, hyperæmia, and desquamation of the skin. The choice of the proper medicines and methods of treatment which will best fulfil these indications in each given case, and the perseverance in this medication, constitutes the secret of the successful treatment of eczema. After this brief review of the general therapeutics of eczema the author passes to the discussion of the special drug proposed by him as a cure of eczema, viz., resorcin. This drug, discovered in 1864 by Barth, belongs to the group of dihydroxylbenzols, in which two atoms of the hydride of benzol (C_6H_6) are replaced by two hydroxyls (HO). It is obtained by the fusion of the resin of galbanum or the benzoldisulfonic acid with caustic potash.

Resorcin presents small, colorless crystals,

striking a reddish tint on contact with air, is easily dissolved in water, alcohol, ether, and glycerin, less so in oils, fats, and vaseline. The taste of resorcin is sweetish and pungent, and its odor recalls that of phenic acid. The antiseptic properties of the drug are well established, and, alongside of its antipyretic, caustic, and hæmostatic virtues, as demonstrated by the labors of Andeer, Briegér, and Lichtheim, qualify the drug *a priori* as an eligible application in eczema. Hithertofore resorcin has found a limited but by no means an unsuccessful application in the catarrhal affections of the respiratory passages, in febrile affections, especially in connection with antipyrin, and, through the recommendation of Andeer, also in certain skin-diseases, such as erysipelas, scarlatina, pemphigus, leprosy, and wounds of an infectious nature, and burns.

The author of the paper which we are abstracting, Dr. Wyss, happened to suffer from an eczematous condition on both hands, and used a pomade of vaseline containing ten per cent. of resorcin with the view to lessen the intolerable itching subsequent to the vesicular eruption and the infiltration of the skin. The effect was surprising, itching and infiltration disappearing rapidly after the application of the pomade. These good results obtained with resorcin on his own person were later, likewise, obtained in the treatment of other cases of eczema. Wyss employed resorcin in the following forms:

1. As a powder, associated with poudre de riz, talc de Venice, and other bland bases:

℞ Pulv. amyl. oryz., ʒv;
Resorcini, ʒss–i. M.
F. pulv. subtiliss.

The hygroscopic tendency of resorcin offers, however, some difficulty in properly preserving these preparations.

2. In a solution of oil, which dissolves but little of the drug:

℞ Resorcini, gr. xv–xxx;
Ol. oliv.,
Ol. amygdal., āā fʒi.

3. In a solution of glycerin:

℞ Resorcini, ʒi;
Glycerini, fʒv.

4. In the form of a pomade:

Vaselini flav. sive axung., ʒv;
Resorcini, gr. xlv–lxxv.

Wyss tried the drug in three forms in numerous eczematous affections of the nose, face, ears, and extremities. The following were the principal effects observed from this medication: The preparations of resorcin, applied on an eczematous eruption during its period of humidity, form, by the coagulation of the albumen of the secretion, a protective disinfectant cushion, which, without being irritant, stimulates the formation of the epidermis, and alleviates the pain and itching.

In the desquamative period, the pomade or glycerite of resorcin causes the fissures of the skin which may still exist to rapidly cicatrize. The new epidermis, stimulated by the action of resorcin, readily expands, and acquires the normal power of resistance.

Wyss details six cases of eczema successfully treated by preparations of resorcin. In all he has treated about thirty cases, and expresses himself well contented with the results obtained by resorcin. He adds that in no instance has he observed symptoms of irritation after the use of the remedy, such as have been observed after the internal administration of doses exceeding 45 grains. The most favorable periods to exhibit resorcin appear, in the judgment of Wyss, to be the times when the eruption shows a discharge, and when the drying-up process begins. In the former stage the inflammatory congestion has disappeared, and in the latter we can usually still find discharging surfaces and fissures between the scales and crusts. Wyss urges other dermatologists to try the remedy, and to confirm its curative value observed by himself.

THE TREATMENT OF OLD CORNEAL OPACITIES.

In the last number of Graefe's *Archiv für Ophthalmologie*, DR. DANTZIGER advocates the treatment of old opacities of the cornea by friction performed daily, and continued for two or three months if necessary. When the opacity is of moderate size, but of considerable density, it is recommended that it should first be scraped away, and the friction, or "massage," commenced as soon as the epithelium has been reformed. The scraping is performed with a Graefe's knife, used in the manner in which one scrapes away a blot with a penknife. Antiseptic precautions are used, and iodoform is applied as a dressing; cocaine produces sufficient anæsthesia. Atropine and warm fomentations are used if the reaction be very great; by the fifth to the eighth day the epithelium has generally been reproduced,

and the "massage" is then commenced. A minute piece of Pagenstecher's ointment is introduced, and the upper lid is then moved from side to side over the cornea with the forefinger, with a rapid to-and-fro movement, for about half a minute. Some hyperæmia is produced, which should not last more than a few minutes; if it last as long as half an hour, the treatment must be used cautiously, and may have to be abandoned. The author gives a detailed account of ten cases, in four of which the friction was preceded by scraping. With the exception of three, all were opacities which had existed in a stationary condition for more than three years, and in all except one (in which the whole cornea presented a grayish opacity) there was a very great improvement in vision, sometimes without any obvious clearing of the cornea. An improvement from $\frac{20}{200}$ to $\frac{20}{40}$ in three months would, perhaps, about represent the average result of the cases, but in some it was much better. Those who know how very intractable these cases are under ordinary treatment, will welcome any method which offers a reasonable prospect of ameliorating their condition; and should these results be borne out by wider experience, a very valuable addition will have been made to the resources of ophthalmic surgery.—*Brit. Med. Journ.*, February 20, 1886.

THE MANAGEMENT OF PLACENTA PRÆVIA.

Dr. Malcolm MacLane offers the following rules as those which should best govern the treatment of placenta prævia (*Amer. Journ. Obstetrics*, March, 1886):

First.—In any case avoid the application of all chemical styptics, which only clog the vagina with inert coagula, and do not prevent hemorrhage. At the very first, the patient should be put in a state of absolute rest,—body and mind,—and a mild opiate is often desirable at this stage to quiet irritation.

Second.—Inasmuch as the dangers from hemorrhage are greater than all else to both mother and child, at the earliest moment preparations should be made to induce premature labor; and labor being once started, the case should be closely watched to its termination by the accoucheur.

Third.—In primiparæ, and mothers with rigid tissues, the vagina should be well distended, by either the colpeurynter or tampon, as an adjuvant to the cervical dilatation.

Fourth.—In the majority of cases generally, and in all cases especially where there is reason to believe that rapid delivery may be required, it is more safe to rely upon the thorough continuous hydrostatic pressure of a Barnes's dilator than on pressure by the fœtal parts.

Fifth.—Where the implantation is only lateral or partial, and where there is no object in hurrying the labor, bipolar version, drawing down a foot, and leaving one thigh to occlude and dilate the os, may be practised according to the method of Braxton Hicks, except in cases where the head presents well at the os, when,

Sixth.—The membranes should be ruptured, the waters evacuated, and the head encouraged to engage in the cervico-vaginal canal.

Seventh.—In the majority of cases, podalic version is to be preferred to application of the forceps within the os.

Eighth.—In some cases, in the absence of sufficient assistance or the necessary instruments, the complete vaginal tampon, in part or wholly of cotton, may be applied and left *in situ* until (within a reasonable time) it is dislodged by uterine contractions and the voluntary efforts of the mother. In case of favorable presentation,—occiput or breech,—the tampon will not materially obstruct the descent of the child, and in some cases the tampon, placenta, and child will be expelled rapidly and safely without artificial assistance.

Ninth.—The dangers of septic infection by means of the tampon or india-rubber dilators are so slight, if properly used, as not to be considered as seriously impairing their great value.

Tenth.—Whenever it is possible, dilatation and delivery ought to be deliberately accomplished, in order to avoid maternal lacerations.

Finally.—As cases of placenta prævia offer special dangers from post-partum hemorrhages, septicæmia, etc., the greatest care must be exercised in every detail of operation and nursing, to avoid conveying septic material to the system of the mother.

Absolute cleanliness, rather than chemical substitutes for that virtue, should be our constant companion in the practice of the obstetric art.

TEREBENE AND TERPINE.

Dr. William Murrell writes to the *British Medical Journal*, February 27, 1886, that he has received so many letters from physicians in different parts of the country giving the

results of their experience with terebene in the treatment of winter-cough, that practically there has been an informal collective investigation. He states that out of ninety-four additional cases reported to him, distinct success is recorded in eighty-one. In six of the cases of failure, a further investigation showed that there had been an incomplete diagnosis, the patient suffering from some complication, such as aneurism or aortic disease, the existence of which had not been previously suspected. In ten cases the patient complained of nausea after taking the medicine, and in several instances when inhaled from lint, it excited coughing and apparently acted as an irritant. Dr. Murrell's explanation of the latter fact is that much of the terebene in the market is very impure. According to Dr. Murrell, terebene improves as it grows older, becoming bland and oily. Reports sent to Dr. Murrell also speak highly of the benefit of terebene in acidity and flatulency, and other forms of dyspepsia.

According to the Paris correspondent of the *British Medical Journal* of the same date, Dr. Descroizelles adds his testimony to that of Dr. Murrell as to the value of terpine in chronic bronchitis simulating tuberculosis. The patient was a boy 8½ years old, small and delicate; he had been previously treated at the same hospital for pleurisy on the right side. He coughed, vomited, and spat blood; had night-sweats, completely lost his appetite, and was too weak to move. Very little could be learned concerning his antecedents. In the right infraclavicular region there were dulness on percussion, a cavernous *souffle*, and subcrepitant *râles*. The sputa were abundant, both mucous and purulent, and mixed with blood. The axillary temperature rose to 38.6° Cent. (101.5° Fahr.). The pulse was 120, and respirations 40. The chest over the part affected was painted with tincture of iodine, and a gramme (15 grs.) of phosphate of sodium was given daily. The child grew worse, hæmoptysis occurred several times, and there was alternate diarrhœa and constipation. The dulness on percussion became more and more marked at the apex of both lungs, but especially on the right side, where moist *râles*, almost gurgling sounds, were heard, also a cavernous sound. On the left side moist crackling sounds had replaced dry crackling sounds. The child grew weaker and refused food; his cheeks were sunken and flushed, and death seemed imminent. Glycerin and creasote were substituted for phosphate of sodium without any good result. Dr. Descroizelles then decided to administer terpine. Two grammes (30 grs.) of this substance were dissolved in forty grammes (1¾ oz.) of alcohol and twenty of distilled water, and the child took three or four teaspoonfuls of this mixture daily. A marked improvement followed; less sputa were expelled, and they were free from blood; the appetite increased, the general condition improved, and the patient became convalescent. Lime-phosphate and gentian wine were given instead of terpine. In the interval between the beginning of September and the middle of November the pulmonary symptoms disappeared, and the auscultatory sounds were normal. The child was sent into the country, apparently re-established in health.

THE PROPHYLAXIS OF ASTHMA.

Dr. David W. Yandell (*American Practitioner and News*, March 6, 1886) states that he has obtained almost uniform success in his attempts to prevent attacks of asthma in children by the administration of bromide of potassium and atropine. The method is to give 10 grains of potassium bromide in a glass of seltzer water every morning on rising and at bedtime, while the $\frac{1}{125}$ of a grain of sulphate of atropine is added to the latter dose. This treatment should be continued steadily for several months, while the patient should live in the open air and take a cold sponge-bath daily, and may possibly require iron and strychnine. This method Dr. Yandell states invariably succeeds in children, while in adults asthma has usually existed so long that it has wrought changes in the pulmonary apparatus quite beyond the control of the remedies under consideration. Even in children the full effects of the drugs are only obtained when they are given with the utmost regularity during long periods of time, and in doses sufficient to produce their distinctive physiological effects. Dr. Yandell states that he has treated nine cases by this method occurring in patients aged respectively, one of 6 years, three of 10 years, two of 11, one of 12, one of 13, and one of 14. All recovered but two, and in neither of these was the treatment fairly carried out by the parents. None were dismissed under fifteen months, while two were under treatment for two years. In five of the nine cases the disease was hereditary. Eight of the nine were unmistakably neurotic, and this fact may serve as the reason for the success of the treatment.

THE COMBINED USE OF COCAINE AND NITRATE OF SILVER IN CERTAIN SUPERFICIAL AFFECTIONS OF THE EYE.

At the meeting of the Medical Society of London held February 22, 1886, Mr. Brudenell Carter (*British Medical Journal*, February 27, 1886) read a short paper on this subject, to the effect that while local applications of nitrate of silver were often of great service in congestive ulcerative affections of the eye, it was generally quite undesirable and unnecessary to allow its action to spread beyond the particular areas; one of its effects being, he said, to remove the corneal epithelium when allowed to come into contact with it. It was generally somewhat difficult to limit this action, owing to the pain caused by its use and the accelerated secretion of tears which ensued; and it was to mitigate these conditions that cocaine was so useful. By destroying sensation temporarily it allowed the operator to apply his remedy with all the delicacy and certainty he could desire, and the lachrymal secretion did not increase so as to interfere with what he was doing.

THERAPEUTICS OF BURNS.

Dr. Altschul, a surgeon of a large steel-factory, having had an excellent opportunity of testing the various therapeutic measures, communicates his experience to the *Monatsh. f. prakt. Dermat.*, No. 1, 1886. All known, or rather recommended, remedies were tried, with the view of securing an ideal healing without suppuration. The aseptic measures were of course found the most and only eligible ones. Iodoform appears to have furnished the most satisfactory results. Only in burns of the first degree dressings with argillaceous earth proved superior to lessen the severity of pain. Iodoform can be said to prevent with certainty suppuration in burns of the second and third degrees. At first Altschul tried the powder-dressings; later a ten per cent. iodoform-gelatin, after the recommendation of Pick. As the latter, however, was found hard to preserve, he followed Unna's advice, and employed an iodoform paste, and in time arrived at the conclusion that the iodoform bolus-paste was the choicest application of all. The formula for this paste is as follows:

℞ Boli alb., ʒss;
Olei olivarum, fʒi;
Liq. plumbi subacetici, fʒvi;
Iodoformii, 10–20 per cent. = ʒii–iv.

In order to prepare this paste, the bolus is to be first mixed with oil, as otherwise the subacetate of lead would form an insoluble mass with the bolus. Finely-powdered roasted coffee disguises the odor of iodoform very effectually.

THE TREATMENT OF VARICOCELE BY EXCISION.

The various methods adopted for the cure of varicocele go far to prove that as yet no one plan is so satisfactory as to leave nothing more to be desired. Of the various means which have been proposed, Mr. A. W. Mayo Robson (*Brit. Med. Journ.*, February 27, 1886) thinks that none equal in completeness and safety the complete excision of the bundle of enlarged veins.

After any radical operation for varicocele, there must of necessity be a greatly disturbed circulation in the scrotum, and a liability to hydrocele or slight orchitis, and this he has found occasionally even in subcutaneous ligature of the veins; but orchitis supervened only once, and then in a syphilitic subject, who had had specific orchitis a short time before being treated for varicocele.

The train of nervous symptoms frequently accompanying varicocele is often so severe as to demand treatment; and, when some tangible cause is found, such as a varicose condition of the pampiniform plexus, producing congestion and neuralgia, and ultimately atrophy of the testis, it is the surgeon's duty to give relief, especially when it can be done without danger. The operation of excision is performed as follows:

The skin of the scrotum, having been shaved and well washed, is enveloped in a carbolic dressing, which is left on for twelve or twenty-four hours preceding operation.

After the patient has been anæsthetized, and every antiseptic precaution adopted, the cord of the affected side is caught between the left finger and thumb over the site of the varicocele; the vas deferens, which is easily felt, is allowed to slip backwards, leaving the enlarged veins within the grasp.

A vertical incision of three-quarters of an inch is now made through skin and fascia, quite down to the veins which immediately bulge through the wound, and are caught between the finger and thumb of the right hand; the finger-nail then serves to break through a film of fascia which separates the veins from the vas deferens. A double No. 2 catgut ligature is passed round the bundle of

veins, and the two ligatures thus placed *in situ* are tied about an inch or more apart, the intermediate varicocele being completely cut away.

No bleeding occurs, as a rule, and the wound is so small, and falls so well together, that sutures are scarcely required. A small catgut drain may be left in, but this is not absolutely necessary. The wound is covered with carbolized gauze, and over this is placed a good pad of salicylic silk or wool. In some cases the dressings are not removed for a week, when the wound is completely healed; but, when a drainage-tube has been left in, it should be removed on the second day.

Mr. Robson reports a number of cases successfully treated by the above plan.

Reviews.

THE USE OF THE MICROSCOPE IN CLINICAL AND PATHOLOGICAL EXAMINATIONS. By Dr. Carl Friedlaender. Translated by Henry C. Coe, M.D. Pp. 195, 12mo.
New York: D. Appleton & Co., 1885.

The appearance of an English translation of Friedlaender's very popular and excellent little volume is a welcome addition to our book-lists.

For such of our readers who may not be familiar with the scope of the book, it may be of interest to indicate its contents. The text has been written entirely from the standpoint, and for the guidance, of the clinical worker, consequently it discusses only those subjects likely to be brought to the notice of the practitioner, making no pretension to systematic completeness.

Of the seven chapters, four are devoted to brief descriptions of the microscope, objectives and accessories most desirable for the special needs of medical work, reagents, methods of preparation, including an excellent review of the most valuable stainings.

The sections on the identification and staining of the schizomycetes will be found very valuable. To those not yet familiar with Gram's method of staining bacteria we strongly recommend a trial of this admirable method.

The remaining chapters give directions for examining living tissues, fluids, and secretions, including blood, sputa, pus, urine, etc., and, finally, solid elements and tumors.

In judging of the merits of the book, it must be distinctly borne in mind that its object is solely to facilitate clinical and pathological investigations. The simplest means by which these ends can be obtained are usually the ones suggested. It follows, therefore, that many procedures described are crude in comparison with the nicety of the present approved methods of microscopical technique. Most will admit, however, the wisdom of Friedlaender in recommending only those simple manipulations which are possible for the busy man, to whom elaborate methods are but sad spendthrifts of precious time.

While Dr. Coe has earned our thanks by his translation, a somewhat more liberal rendering frequently would have improved the smoothness of the text. The retention of such words as "instrumentarium" certainly adds little to the enjoyment of the reader.

The title-page is faced by a reproduction (by no means an improvement on the original) of the excellent drawings by Friedlaender of a number of the more important pathogenic bacteria. The little book in its English dress will undoubtedly gain many new friends.

PRACTICAL HISTOLOGY AND PATHOLOGY. By Heneage Gibbs, M.D. Third edition, pp. 195, 12mo.
Philadelphia: P. Blakiston, Son & Co., 1885.

The necessity of three editions within less than twice that number of years certainly argues well for the value and popularity of any book. Examination of the present edition of this little volume still further confirms the favorable opinion of its merits. The additions embrace new staining formulæ and other matters of interest. The restoration of carmine to its place among the stains was sanctioned by universal opinion.

The chapter on section cutting seems to have been neglected in the revision. Notwithstanding the very general use of the recent forms of sliding microtomes, all mention of these admirable instruments—by whose introduction the possibilities of microscopical technique have been greatly extended—is omitted; likewise descriptions of the methods of paraffine and celloidine embedding are wanting.

While fully appreciating the convenience of the freezing methods, evidently great favorites with our author, the ignoring of these very important recent methods, which are so well adapted to insure exact results, is to be regretted. In so excellent a guide a few hints regarding refined methods might with great propriety have been included. The book will continue to be a favorite with those entering upon practical histology, and is to be appreciated as a source of trustworthy advice.

SELECT EXTRA TROPICAL PLANTS READILY ELIGIBLE FOR INDUSTRIAL CULTURE OR NATURALIZATION. By Baron Ferd. von Mueller.
Detroit, Mich. Geo S. Davis.

In this, the latest work of Baron Mueller, we have a compact octavo volume of 450 pages, replete with useful information. In its original form the matter of this volume was presented as a series of contributions to the Victorian Acclimatization Society of Australia; but, being accessible to only a limited number in this connection, it was collected into a volume published for the government in Melbourne, 1876. That it supplied a long standing want is proved by the fact that it was soon reissued in India, under the auspices of the central government; in New South Wales, for the benefit of colonists; and went through a German translation in Cassel. Its issue, through the enterprise of a Detroit publisher, now makes it more generally accessible to American readers.

Colonists in a new locality, or persons of culture, desirous of improving their surroundings by a judicious cultivation of useful or ornamental plants, are often quite at loss for proper guides to the collection of suitable subjects for trial. While many experiments have been conducted, and much valuable information accumulated, this material is generally inaccessible to the persons most interested. Scattered through the proceedings of learned societies or stray local journals, it is practically lost. What was needed was a judicious compilation of this vast array of facts. This burdensome task Dr. Mueller has undertaken, and, as the volume before us testifies, has accomplished with signal success.

The species are arranged in alphabetical order, without regard to family relation, and are hence conveniently referred to. The notes under each species are concise, generally well selected, and in non-technical language, which will better meet the wants of the special class of persons for whom the book was prepared. Convenient lists are arranged at the end of the volume, bringing species together under such comprehensive heads as alimentary plants, embracing those yielding (1) herbage, (2) roots, (3) grain, (4) fruits, etc.; condiment plants, hedge plants, dye plants, fibre plants, scenic plants, etc. The geographical index, which embraces the plants of each country, is also an interesting feature.

In several minor points of classification we differ from the arrangement followed. For instance, nearly all the Coniferæ, including Abies, Larix, and Picea, are classed as species of Pinus. In a work like this the points of difference should have been insisted upon, since they are so apparent even to the unscientific. In only one instance have we noted a positive error,—*i.e.*, the North American tulé is *Scirpus validus*, and not the root of a *Sagittaria*.

On the whole, however, it is a very satisfactory book, and we hope it will soon be in the hands of all lovers of plants.

PRACTICAL HUMAN ANATOMY: A WORKING GUIDE FOR STUDENTS OF MEDICINE, AND A READY REFERENCE FOR SURGEONS AND PHYSICIANS. By Faneuil D. Weisse, M.D., Prosector (1863–65) to the late Valentine Mott, M.D., LL.D., Emeritus Professor of Surgery and Surgical Anatomy, Medical Department of the University of the City of New York; Professor of Practical and Surgical Anatomy, Medical Department of the University of the City of New York; Professor of Anatomy, New York College of Dentistry. Royal octavo, 468 pages of text. Illustrated by 222 lettered plates.
New York: William Wood & Co., 1886.

This book is evidently the work of a thorough and skilful anatomist, and one who has devoted many years to the teaching of practical anatomy, knowing exactly when and how to show his work so as to be viewed in the best light. The author has apparently intended the book more for the use of the student in the dissecting-room than for the general practitioner, although the latter will find the plates a most valuable and ready field of reference.

It is arranged in a series of twenty-seven dissections, including all parts of the body excepting the eyeball and auditory apparatus, and we agree that these hardly come under the scope of such a work.

At the beginning of each dissection the primary incisions for the removal of the skin are shown in wood-cuts, which are much better, being fewer in number and simpler, than is figured in Gray and many of our dissectors. All through the text and at each stage of the dissection much valuable information is given in small type, stating what is to be removed and what preserved as the dissection progresses. We are glad to see the use of the scissors advised, which are seldom used in this country except by prosectors and advanced students.

No reference is made to surgical or applied anatomy, and nothing is spoken of which cannot be demonstrated with the unaided eye; therefore the structure of any part that requires the aid of the microscope will have to be sought for in histologies.

The plates, two hundred and twenty-two

in number, are nearly all from nature. They are indeed works of art in their way as faithful studies of actual conditions, and represent an amount of work on the part of the author and artist that cannot fail to be appreciated by the student and practitioner.

The plates of the male and female perineum, thigh, region of the neck, and thorax are especially worthy of mention.

The text is short, and in many instances unsatisfactory, and with great tendency to repetition. For instance, we find the description of the anterior tibial nerve occurring in four separate paragraphs in seven consecutive pages. The mammary gland is disposed of entirely in six lines.

The anatomy of the inguinal region, particularly the part which concerns hernia, is not made as clear in the text or drawings as might be desired, and we fail to find any mention of the inguinal canal whatever. This might be treated without the fear of encroaching upon the field of surgical anatomy in any way. Some errors and omissions have crept in, *e.g.*:

In the ligaments of the knee-joint no mention is made of the ligamentum mucosum or ligamenta alaria. Although composed of synovial membrane, the former is the first thing noticed when the knee-joint is opened anteriorly, and plays a most important part in retaining the patella in position after amputation through this articulation.

The subcrureus muscle is described as being attached to the anterior ligament of the knee-joint, whereas it is inserted into the upper portion of the synovial sac of this articulation, its function being to raise the membrane when the leg is extended, so as to be uninjured by the play of the patella.

In the articulations of the fingers and toes a posterior ligament is described, rather contrary to present teaching, as the extensor tendon covers the dorsal portion of the joint, and plays the part of a ligament.

The three phalangeal rows are mentioned as composed of five phalanges, four phalangines, and five phalangettes. If this were generally adopted it would save much unnecessary confusion in speaking of the finger.

We find the scalp mentioned as being composed of but three layers, whereas five are easily demonstrable.

The anconal space, spoken of as just anterior to the elbow-joint, is divided into two fossæ by the biceps tendon, and is analogous to the popliteal space in the lower extremity. We are at a loss to see why it should be so called, as anconal pertains to the region on the opposite side of the arm.

We venture to find fault with some parts of Professor Weisse's book, not from any spirit of hostility, but rather to suggest for future editions. We congratulate the author on his book, and also on procuring the services of so talented an artist as Mr. Maximilian Cohn.

Typographically the volume is most praiseworthy, and the publishers, William Wood & Co., have done their part in making the book most acceptable to the profession.

THE METHODS OF BACTERIOLOGICAL INVESTIGATION. By Dr. Ferdinand Hueppe. Translated from the German by Hermann Biggs, M.D. 12mo, pp. 214. New York: Appleton & Co., 1886.

The original of this translation appeared in February, 1885, and the leading points of value in it have already been incorporated and presented to American students in Dr. Dolley's "Technology of Bacteria Investigation" (Boston, S. E. Cassino & Co., 1885). The present translation is, however, none the less welcome. It enters well into details in describing methods, is illustrated with some thirty wood-cuts of apparatus, and devotes a few pages to the morphology of bacteria. The colored plates of the original have been omitted in the translation.

The author—docent in hygiene and bacteriology in the chemical laboratory of R. Fresenius in Wiesbaden—has been a student of Prof. Robert Koch, and prepared the book at the request of that investigator, the only other books on methods in German at that time being Plaut's "Färbungs Methoden zum Nachweis der faulniss und pathogenen Mikroorgismen" and Kaatzer's "Technik des Sputum Untersuchungs auf Tuberkel-Bacillen." These were both superficial pamphlets, and the best articles on the subject were unavailable from being scattered through various journals and reports, and hidden in accounts of experiments.

The subject is treated in seven chapters; spontaneous generation and morphology are handled briefly in the first and second, followed by directions for staining and mounting.

Chapters three, four, and five are devoted to culture methods, inoculation, and general biological problems respectively, while the sixth chapter treats of the special methods employed in the investigation of earth, water, and air from a hygienic stand-point. In the last chapter bacteriology as an object of instruction is considered.

The importance of instruction for medical students in the methods of investigating bacteria and in the relations held by them to special diseases, hygiene in general, and many physiological problems, is being daily more thoroughly appreciated. Copenhagen, Munich, Göttingen, Breslau, and Wiesbaden now furnish special courses of instruction in connection with their respective universities. In this country special instruction can be had in the Carnegie Laboratory of New York, in the Biological Department of the University of Pennsylvania, and elsewhere; but as yet there have been no special laboratories established for bacteriological research.

Dr. Hueppe is right in saying (p. 213), "The actual every-day necessities lie at present more in the preparatory courses. Every practising physician, and especially every medical officer, is desirous of so far informing himself concerning these methods as to be able to follow intelligently the recent investigations, since the morphological and biological foundations of the general processes of decomposition and the ætiology of infectious diseases have assumed tangible form through the development of the methods."

Bacteriological instruction should, however, be placed in the hands of men thoroughly versed in the technique of the immediate subject, and at the same time possessed of a training in general biology sufficiently broad to enable them to maintain a conservative position amidst the wrangling of rival investigators.

The bitterness that exists between Koch and Pasteur should not be shared by American physicians, and the unseemly haste with which the medical profession have chosen sides in questions concerning the ætiological agency of bacteria should in the future be avoided.

Anything tending to enable the would-be investigator to select the good out of the conflicting experiments constantly reported is of value. For this reason Dr. Biggs's translation of Hueppe's work is to be welcomed. The work of translating has been well done; the index is complete; and, while the book does not replace or displace any of the works already in the market, it will be found a valuable addition. There is now no excuse for idleness among American investigators; with such books at hand as are to be had in English by Klein, Stemberg, Dolley, Woodhead, and Biggs every essential step in manipulation may be acquired, and complete references found to all papers up to the last few months in connection with any special branch of the subject.

ORGANIC MATERIA MEDICA AND THERAPEUTICS. By James Young Simpson, M.D.
New York: J. H. Vail & Co., 1885.

The writer has compiled this book with a view to affording the medical profession the use of a synoptical materia medica. Dealing with organic remedies, under each head we find the English name, origin, natural order, habitat, constituents, description, solubility; then its general, physiological, therapeutical, and toxicological action, and its various pharmaceutical preparations. Everything is concisely stated, and if at times somewhat dogmatic, the author pleads the necessity for brevity and his own careful study of authorities. As a means of impressing the outlines of materia medica and therapeutics on the mind the book will prove useful. The practitioner who would refresh his memory, as well as the student, may read this book with profit.

ESSENTIALS OF VACCINATION: A COMPILATION OF FACTS RELATING TO VACCINE INOCULATION AND ITS INFLUENCE IN THE PREVENTION OF SMALL-POX. By W. A. Hardaway, M.D., etc.
St. Louis: J. H. Chambers & Co., 1886.

The author has collected together about all the useful information concerning vaccination that is extant. His manner of treating the whole subject is unpretentious and modest. For most of his facts he gives his authority, and a perusal of his book—the operation being simple—will make any person of average understanding a better and more intelligent vaccinator than most men who vaccinate. Of the American vaccinator he has by no means a high opinion. He quotes Reynolds's system for his authority in saying "that vaccination has been worse performed generally in England, its birthplace, than in any country in Europe;" but adds, "I doubt if there is a civilized land where less is known of the theory and practice of vaccination than in America." This is owing to "vaccination from arm to arm being comparatively unknown." Of course, vaccination from the "scab" meets with no support from him; yet we imagine it possible that the value of such vaccination has been much underrated, and would hazard the opinion that had such vaccination been thoroughly performed,—*i.e.*, with several insertions and from carefully selected human crusts, even though of long descent,—the individual so vaccinated would have fared as well in the presence of contagion as the average population vaccinated with calf lymph.

The great uncertainty of the latter leads to so many being left in the unsuccessful list, while its violence at times has been simply terrifying, not only to parents and friends but even to the vaccinator himself. Certainly, in regard to the transmission of vaccinal syphilis there seems to be less danger in using human crusts, well selected, than in arm-to-arm vaccination.

Of the danger of transferring bovine diseases in general the author makes light, though why and on what just grounds he fails to say. Of one thing, however, the reader will be thoroughly convinced—if convinced he ever can be—after reading Dr. Hardaway's little book, and that is of the inestimable value, despite all drawbacks, of vaccination.

CLINICAL NOTES ON UTERINE SURGERY, WITH SPECIAL REFERENCE TO THE MANAGEMENT OF THE STERILE CONDITION. By J. Marion Sims, A.B., M.D., etc. Memorial Edition.
New York: William Wood & Co., 1886.

The speculum of Sims was the gate of gynæcology though which, and through which alone, the eager hordes pressed on to the fertile fields beyond; and they are still pressing on. The extremely modest title of Dr. Sims's book scarcely prepared the medical world for its contents. Extreme modesty of a certain sort marks its pages, though dealing with topics of the most delicate nature, and at a time, too, when the world was not yet educated to its present insensitive conditions as to such matters, at a time when the student was highly favored who was admitted to view operations of the character herein described. In fact, Dr. Sims's style in the treatment of these topics is to be eminently commended, much more, perhaps, than his experiments in regard to the sterile condition which he so carefully narrates; and it is probably fortunate that these experiments and their result in practical failure were so honestly set forth by so eminent a man at so early a stage in the growth of gynæcology. Had this branch of the art been pursued as eagerly as some others, it would soon have required a child far wiser than the proverbial one to "know his own father." But in reading again this reprinted work one is struck at every page with the immense value of Dr. Sims's labors. So many of its suggestions and procedures have become household words and household facts in the medical world that we have ceased to remember our indebtedness. The publishers have done us all a service in the reissue of the book, and those who do not possess it should hasten to own one of the few true classics of modern medicine.

DRAINAGE FOR HEALTH; OR, EASY LESSONS IN SANITARY SCIENCE. By Jos. Wilson, M.D. Second edition, with Important Additions.
Philadelphia: P. Blakiston, Son & Co., 1886.

The lessons are easy, but the scholars are often dull of understanding. The book is devoted mainly to drainage. It deals with general principles, well illustrated by cases in point. The grand principles of drainage—of fields and swamps, as well as the streets and houses of the city—are forcibly put before us. The rural resident will find as much instruction in the book as the citizen who dreads typhoid and diphtheria. The subject of traps is discussed, and, leaving the subject somewhat, we have a chapter on parasites, and some declamation concerning boards of health. The wood-cut illustrations are intelligible, and the author's style interesting, and one gets a good deal of information on the kindergarten principle before he knows it. It is a good book for the general reader, since it is sound and not too technical.

ELEMENTS OF PHARMACY, MATERIA MEDICA, AND THERAPEUTICS. By W. Whitla, M.D. Third Edition.
London: H. Renshaw, 1886.

This is a small volume of nearly six hundred closely-printed pages; the first half of which is occupied with the discussion of pharmacy, administration of medicine, and materia medica; the last half being devoted to therapeutics and certain other matters. The materia medica refers to the British Pharmacopœia; and the description of the various remedies, although exceedingly brief, is sufficient we suppose for the purposes of the medical student. The discussion of therapeutics is on the whole good, although we notice certain things which seem to us might be better. Thus, in iodoform the exact amount which it is dangerous to use on an external wound should be stated in grains, and we doubt very much the truth of the assertion that pilocarpine is eliminated by the kidneys and not by the skin.

The close relation of this book to the British Pharmacopœia will prevent its being used in this country by medical students, but a careful looking over of a good many of the articles convinces us that the work well deserves the success which it has received in England. The writer is apparently well posted in English literature, at least, and is evidently a close reader of the THERAPEUTIC

GAZETTE. New remedies, such as arbutin, boldo, tannate of cannabin, hyoscine, delphine, receive brief but careful consideration. At the close of the volume is a most elaborate table of the chemical reactions of the officinal remedies, which we have no doübt is very valuable to students who have to pass examinations in chemistry, and affords most excellent material for rapid forgetting. In contrast with this table, as affording excellent material for permanent remembrance, are the few pages devoted to prescription-writing. They seem to us the best consideration of the subject that we can remember to have read. The so-called index of poisons and their antidotes is, to our thinking, very brief, and especially and emphatically do we dissent from the statement that "Murrell's 'What to do in Poisoning' should be in every practitioner's instrument-bag." The contents of that book ought to be in every practitioner's head. The subject of poisons is so important, and covers so little ground, and the knowledge when wanted is wanted so badly, that there is no excuse for the practitioner's not being thoroughly posted in it.

REVUE SCIENTIFIQUE.

Recent numbers of the *Revue Scientifique* have contained the following articles of general medical interest.

February 6, 1886:

Military Medicine in 1866; The Fermentation of Milk (M. Bourquelot); Biographies of Carpenter, Huxley, and Hooker.

February 13, 1886.

Instinct and Intelligence (M. Hermann Fol); The Derivatives of Menthol (M. Arth).

February 27, 1886.

Instinct and Intelligence (M. Hermann Fol); Sterility and Fecundity of Parisian Families.

Correspondence.

THE ABDOMINAL BANDAGE AFTER LABOR.

To the Editors of the THERAPEUTIC GAZETTE:

GENTLEMEN:—On page 333 of the *Medical Record*, under the caption of "The Abdominal Bandage after Labor," attention is directed to Prof. Czerny's ideas of abdominal bandaging, as set forth by him in the *Centralblatt für Chirurgie*, January 16, 1886. I would like to ask the question that often presents itself, What is the general custom of American practitioners in reference to the use of the bandage in question? The popular opinion is that the bandage is designed exclusively to aid in restoring the form possessed previous to pregnancy. I had always supposed the professional idea in the use of the bandage was to give support to the uterus and its appendages during the period of involution. I believe the theory wrong and the practice worse than useless. In point of fact, the results sought after by those who advocate the use of the bandage are either negative or directly opposite those desired. Especially is this true, to say the very least, of the bandage as commonly applied.

Instead of a support, it actually retards the restoration of the uterus to the normal condition. After an experience of several years, with a fair average of cases, country practice, I have come to regard the bandage of so little importance that I leave its use almost entirely to the wish of the patient. To some it carries with it a sense of comfort in supporting the abdominal parietes that may recommend its use in exceptional cases. Many of the diseases from which the mothers of human-kind are suffering refer their origin to the lying-in chamber. Not because, as some would infer, of the absence of, or the improper use of, the abdominal bandage, but because of the inconsistencies indulged in by many subsequent to the parturient act. Women will insist on leaving their beds and performing many items of work not permissible in view of their physical condition, and this, too, in opposition to the dictates of common sense and the earnest protests of their medical attendant. And the results are confronted almost daily by the busy practitioner in the form of displacements, cervicitis, metritis, ovaritis, and many other diseases of the uterus and its appendages, with their concomitant symptoms and consequent sufferings and misery. The question is not easily answered, How can the accoucheur impress upon those subject to his professional care the importance of giving *rest* to those delicate and highly sensitive organs that have but recently and are still undergoing important changes? The beauty and symmetry we so much admire, the strength of body and vigor of mind so essential to woman in the discharge of her maternal duties, depend more upon the proper observance of natural law than upon any mechanical contrivance or device of man.

E. E. BRITTON, M.D.

SPENCER, OHIO, March 23, 1886.

VIENNA.

(From our Special Correspondent.)

ANTIPYRETICS IN VIENNA.

We find hyperpyrexia treated in Vienna not only by drugs, but by the application of cold in compresses, packs, baths, and in a most efficient and convenient manner by Leiter's coils, or "kühlapparat." This consists of flexible metal tubing, wound in coils of varying shapes and sizes, so made as to fit different regions of the body. These coils are connected by rubber tubing with receptacles placed above the patient; cold water traverses the coil, and is discharged by siphon action. A cold compress may be laid over the skin, and the coil lightly bandaged upon this. These coils are lighter, more comfortable for the patient, and more convenient and cleanly than ice-bags. These coils may be connected with an alcohol lamp and hot-water reservoir, and warm applications made if desired. This apparatus has been used in several American hospitals. It has been made lighter and more convenient, until for both doctor and patient it is efficient and agreeable.

Cold compresses are especially used in high temperature with local inflammations, as in puerperal sepsis. Cold packs, followed by the wrapping of a blanket or dry sheet about the patient, are used frequently with children. Hospital wards have movable bath-tubs which can be brought to the bedside, and in which a fever patient can be immersed. Antipyretic drugs in common use are quinine, antipyrin, thallin, and hydrochinon. The latter two are used much less frequently than the former. For rheumatic hyperpyrexia salicylate of sodium is given.

In the clinical wards of Prof. Bamberger antipyrin is given in doses varying from 2 to 3, 4, or 5 grammes (15 to 75 grs.) in twenty-four hours in all hyperpyrexias except typhus abdominalis and rheumatism. In the former quinine is given, in the latter sodium salicylate. Depression is rarely observed after the use of antipyrin; a general erythema is the most common inconvenience experienced. For typhus abdominalis the stimulant properties of quinine are desired. In this clinic thallin is rarely used. Cold applications and packs are in constant requisition.

In the clinic of Prof. Nothnagel experiments have been made by Dr. Jaksch with thallin, and his results have been published in a reprint from the *Zeitschrift f. Klinische Medicin.* He states that thallin is worthy of a further trial, and especially in cases where a rapid reduction of temperature is necessary. In his experiments the hydrochlorate, sulphate, and tartrate were used, the last being least desirable. The effects of thallin resemble those of kairin, but its use is not attended by the unpleasant stomach and general disturbances which often follow the giving of kairin. Cyanosis and collapse did not occur. Free perspiration accompanies a reduction of temperature, and a subsequent rise of temperature is ushered in by a chill. A lessening of pulse and respiratory rate was observed. In doses of ⅛, ¼, or ½ gramme (2 to 7½ grs.) perspiration and fall of temperature occurred one-half to one hour after taking. Minimum temperature was reached in two, three, or four hours. It will be observed that the best results from thallin were obtained with comparatively small doses, and that its use was followed by no ill effects. The formula for thallin is $C_{10}H_8NO$. Its salts have a somewhat bitter, aromatic taste, are very soluble in water; solutions are acid, and give with ferric chloride a green color.

Cases of sepsis treated in the wards of Prof. Nothnagel are given sodium salicylate, alcohol in free doses, and are treated also by cold applications.

In children's diseases Prof. Monti recommends the very cautious use of antipyretics, because of their depressant effects. He prefers quinine and the application of cold.

Prof. Wiederhofer, at the Saint Anne's Children's Hospital, uses in the hospital antipyrin with good results. In ambulatory cases he does not trust the parents or friends of the child to administer antipyrin, but prescribes quinine instead. He uses also very commonly cold compresses and packs.

In Prof. Spaeth's lying-in wards antipyrin is given to reduce temperature in gramme (15 grs.) doses three times in twenty-four hours. Quinine is used when collapse is imminent. The local use of cold is a routine practice for all puerperal fevers. In the clinical wards of Prof. Carl Braun hydrochinon is a favorite antipyretic. It is given in doses of ½ gramme, repeated in an hour if needed. Salicylate of sodium is also used in doses of 1 gramme, repeated several times until a fall of temperature occurs. Antipyrin is also given, and no ill effects from depression and collapse have occurred in its administration.

Cold baths are not often employed. Ice-bags are placed upon the abdomen in abdominal inflammations.

In hyperpyrexias occurring in Prof. Billroth's wards antipyrin is given in free doses,

and Leiter's coils are used. In Prof. Albert's clinic quinine is usually administered in pyæmia and surgical fever. As one would expect, antiseptic surgery has little fever to treat, and infrequent occasions for the use of antipyretics.

BERLIN.

(From our Special Correspondent.)

HENOCH ON THE TREATMENT OF PERTUSSIS—NOTE ON THE CASE OF DIPHTHERIA TREATED BY GALVANO-CAUTERY—ICHTHYOL.

It will be interesting to our readers, we hope, to gain a full insight into the therapeutics of whooping-cough, as advocated by Henoch. The following, originally a clinical lecture on the subject, embodies the principal views of the Berlin authority.

Pertussis is an affection the treatment of which confers but little credit on those who have embraced the healing art. The enormous figure of the remedies alone, recommended since the oldest times, against this affection is proof enough of its incurability. We know no drug capable of aborting the affection or shortening its convulsive stage; while on the other hand, in its third phase, the so-called stadium decrementi, when the natural healing process has set in, every remedy is apparently successful. The numerous drugs which, following the recommendation of other physicians, have been tried, have been nearly all discarded. At present, Henoch relies solely on one remedy, viz., morphine, which is even superior to the vaunted belladonna medication, and is at least able to lessen the gravity and frequency of the paroxysms, especially the nocturnal ones, without, however, influencing the general course of the disease. Henoch usually prescribes the following:

℞ Morph. acet. s. mur, gr. $\frac{1}{8}$–$\frac{1}{4}$;
Aq. dest., f℥i;
Syr. alth., f℥ss. M.
S.—Two to four times daily a teaspoonful.

If excessive somnolence should set in, the drug is at once to be discontinued. In one instance a child, being treated by morphine, slept for eighteen consecutive hours without being interrupted by the paroxysmal coughs, which of course returned after the passing off of the narcosis. In another case, that of a six-months-old child, there was an actual intoxication proceeding with collapse, contraction of the pupils, and sopor, which, however, readily yielded to cold affusions and analeptic measures. It is therefore necessary to instruct the nurses and mothers in every instance of the nature of the prescribed medicine. Using the proper precautions, Henoch states that he has never experienced any accident with the morphine mixture, even if half a teaspoonful of it were given daily for several weeks. He consequently feels justified in preferring this drug to all other narcotics, especially to the dangerous atropine. Still, he regards the morphine only indicated in the graver cases, marked by at least twenty paroxysms within twenty-four hours. In milder cases, inhalations of carbolic acid recommend themselves, which on the ground of the alleged—but hitherto not yet demonstrated—parasitic nature of the affection, appear even theoretically indicated, and have recently acquired a certain reputation with many practitioners of renown, such as Thorner and Burchard. In Henoch's experience this medication has not furnished any constant results, its effects being sometimes remarkably favorable, sometimes doubtful, or again wholly negative. Injurious effects at least have never been witnessed from these inhalations. Their application can be executed in various ways. Henoch uses a one-half per cent. solution of carbolic acid by means of an atomizer, or if this procedure meets with difficulties, orders the air of the sick-room to be impregnated with the same evaporating solution, or a sponge saturated with it to be hung up at the child's bed, over its head, and have the sponge placed several times daily before the nose of the child for a period of several minutes. Other inhalations, such as those of chloroform, benzine, salicylate of sodium, oil of turpentine, tannic acid, and quinine, have all received fair trials, but have not given the expected satisfaction. The same holds true of the internal use of bromide of potassium, of hydrate of chloral, and of quinine. Following the instruction of Dr. Sauerhering, of Stettin (*vide* THERAPEUTIC GAZETTE), the systematic exhibition of quinine in gradually increasing and then decreasing doses has also been tried, and again convinced Henoch that the morphine medication and the carbolic acid inhalations were the best treatment of whooping-cough.

Therefore the idea of aborting or lessening the duration of the affection will have to be abandoned, and the parents must be instructed that a mitigation of the attacks is all that can be expected from the treatment. Fresh air is a decided adjuvant to the prescriptions, though damp and rough weather and the existence of a pronounced bronchial

catarrh contraindicate an out-door sojourn. If the child be attacked during the summer months, one will often be asked whether a trip to the sea-shore be advisable or not. Henoch says that he has often complied with the wishes of parents in this respect, but never saw any benefit from such a change of locality, and the only, though lamentable, result of the journey was often the infection of previously healthy children which came in contact with the sick child at the sea-shore or watering-place. Only exceptionally, as in his own child, he observed a characteristic pertussis disappear in fourteen days after the child had been sent to the Reichenhall Springs. Still, he believes with Trousseau in the existence of so-called abortive cases of whooping-cough, and that the affection in the case alluded to belonged to this category. Trousseau, by the way, has reported a case of genuine pertussis which aborted after a three days' duration.

Your correspondent has obtained some additional data in reference to the young girl treated at the Berlin Charité for diphtheria with actual cautery.

The girl, Martha Tegge, 8 years of age, was presented for treatment on February 9 with diphtheritic deposits on both tonsils, though the uvula and post-pharyngeal wall were free. Decoction of quinine and gargles with chlorate of potassium were ordered. The pulse was 132 and the temperature 38.3° C. On the 10th the cauterization was performed,—*i.e.*, two days after admission to the hospital and about five days after beginning of the disease. This shows that the case was by no means a highly suitable one for the cauterization treatment, as the very initiatory phase of the disease, which can alone be regarded as the proper time for cauterization, had already passed. Pulse 100, temperature 116°, after the cauterization. From this date the course of the pulse and temperature was fluctuating, though a gradual and steady improvement was registered with both. On the day following the operation the deposit had materially decreased in extent, and of course assumed the desired traumatic character, instead of its prior septic one. On the 13th the deposit was pushed off. Unfortunately, the infra-maxillary glands became swollen, assumed a phlegmonous nature, and kept up an elevated temperature. The glandular abscess being opened, the temperature at once went down, and a satisfactory state of the subjective health appeared.

On the 1st of March the patient was seen for the last time, and was just about being discharged as in every way cured.

It is to be added that both the extent of the deposit and the high elevation of temperature justified the attending physicians in regarding the case from the beginning as a hopeless one. Prof. Henoch will, of course, make further trials with the cauterization in diphtheritis.

The testimonies of the high therapeutic value of ichthyol are too numerous and come from too authoritative sources to be overlooked. There are, however, two drawbacks attached to the remedy which will prove a serious obstacle to its gaining a firm hold with the regular practitioner, viz., the secrecy of its preparation in the hands of a few men (the Ichthyol Company, Cordes; Hermanni & Co., in Hamburg), and its liberal eulogization for far too many affections in the lay press.

Your correspondent had an opportunity of trying the local application of ichthyol in six cases of painful tumefaction in the knee, elbow, and other joints following upon various traumatic accidents, such as sprains, fractures, and luxations, and must express an unqualified satisfaction at the rapidity and completeness with which both swelling and pain disappeared under its use. These tests of the remedy were made during a trip from Hamburg to New York on the German steamer "Polynesia" on the crew and passengers, and were duly recorded in the medical journal of the vessel.

The principal utilization of the drug is said to consist in its specific anti-rheumatic virtues, though some clinicians are very positive in declaring the salicylic acid and its allied sodium salts as unquestionably superior. True, Dr. Schweninger, Professor of Diseases of the Skin at the University of Berlin, by the dictatorial grace of Bismarck, praises the drug as an anti-rheumatic of the highest rank, and Bismarck, having been relieved from untold suffering by the aid of ichthyol, did not hesitate to allow his illustrious name to figure as a recommendation of the medicine.

Prof. Schweninger also claims that ichthyol is an unexcelled remedy in neuralgia, sciatica, muscular rheumatism, and in all skin-affections. Your correspondent knows of a case of ichthyosis and of psoriasis which were cured by ichthyol. There is one thing, however, connected with the drug which we do not quite understand, viz., the alleged necessity, especially in rheumatism, to take the drug internally simultaneously with its external application.

We had an interview some little time ago with Captain Rühn, who is one of the firm of the ichthyol company, and who volunteered some interesting points concerning the discovery of the drug. Schroeder, a chemist of Hamburg, was sent by several merchants of Hamburg to Styria, in order to ascertain the nature and products of certain mines which these merchants intended to buy there. He accidentally discovered in this visit a curious stone, which, on a closer examination, revealed its descendency from antediluvian fish deposits. Chemical treatment of this stone gave in time birth to the product which we call ichthyol. Profs. Schotten and Baumann vouch for the absolute harmlessness of the remedy.

We learn that an ointment, an oleate, a soap, and various plasters have likewise been prepared from ichthyol.

Notes and Queries.

NOTES FROM THE CLINIC OF PROF. J. M. DA COSTA AT THE PENNSYLVANIA HOSPITAL.

Aneurism of the Aorta relieved by Iodide of Potassium.—This woman has been in the hospital for some time; when she first came in she complained of a small throbbing lump situated in the episternal notch, and which was very painful. She had first noticed this lump about two years ago, and while it has been growing larger, its course has been somewhat variable, for at times it has seemed to diminish to the size that it was when originally noticed. She has had, during this time, very frequent attacks of dyspnœa and palpitation; in fact, she says that she has rarely been free from these conditions. She has also been troubled with cough, and, at times, has had some difficulty in swallowing. Her appetite has always been fair, her bowels normal, and there is nothing wrong to be noted about her urinary function or apparatus. Her eyesight and hearing are both good. She cannot lie on her left side, but can usually derive relief from the dyspnœa by lying on her back. The cough which she has is somewhat croupy in character and is worse at times. She is now better in reference to the inability to lie on her left side, and can assume various positions without so much discomfort. There is a great deal of pain about this tumor, and recently the glands in its vicinity have become enlarged. She suffers also from vertigo, and says that she every now and then takes cold, when all her symptoms become aggravated; at these times she will suffer from nausea, but has never had any œdema. The main symptoms, then, in this case, are a pulsating tumor, just above the sternum and a little to the right of the median line, associated with dyspnœa, and at times quite severe attacks of vertigo. At present all the symptoms are much better than when she came in, so far as their urgency goes, though we can still plainly see the tumor, which, however, is smaller than it was at the time of admission, the dyspnœa is scarcely complained of, and the vertigo not at all. When she came in the signs of an aneurism were obvious,—it could be nothing else,—and we have the gratification of knowing that it has clearly diminished in size. Dr. Da Costa states that he never had any doubt about the diagnosis. As regards the condition of the pulse, a very perceptible difference may be noted: the right is much stronger than the left, this fact being noted in the temporal as well as in the radial artery. There is, apparently, no difference in the pupils, but this woman has those eyes where it would be a difficult matter to note any very slight disparity. The heart is not increased in size, and there is no murmur. The respiratory murmur is good in both lungs, though it is rather feebler on the right than on the left. The pulsation at the notch of the sternum is still present, but it is only moderate, and when the stethoscope is placed over it no murmur is heard, but there is a long, loud, wavy first sound, produced by the expansion of the sac, followed by a short second sound. The glands about the neck are still enlarged, more markedly so on the right and but little on the left, though some time ago they were very plainly enlarged on the left. No murmur can be heard in the right carotid, and it never was present. Now, there can be no doubt about the diagnosis; when we consider the presence of a pulsating tumor, croupy cough, pain, a wavy first sound, dyspnœa, they all indicate a pressure on some nerve, most likely the inferior laryngeal nerve. Often, in such cases, the use of the laryngoscope will aid in the diagnosis, for occasionally one vocal cord will be paralyzed from this pressure, while the other will be normal. Just now all the symptoms are better, but there is no doubt that we have to do with an aneurism, and there is also no doubt as to its location: it is surely located in the arch of the aorta. There is no doubt either that it has markedly decreased in size. It is obvious that you should be very careful in making a diagnosis in such a case, for an error might be fatal. If, in connection

with the enlarged condition of the glands, you were to mistake this pulsating tumor for a scrofulous gland and plunge a bistoury into it, the result would not be very satisfactory. This improvement has taken place under the free use of iodide of potassium. This woman has had 15 grains thrice daily, which is a very full dosage for her, because every now and then frontal headache and coryza will demonstrate that she possesses an unusual susceptibility to the drug, and its use must then be intermitted. She has been on this treatment since the 19th of January, and has had nothing else, save a little morphine, when the pain was very severe, and iodide of cadmium ointment to the enlarged glands. She has had no particular diet, and nothing special has been done for the cough or dyspnœa, save a little morphine and atropine at first, when the cough was very severe and irritating. Now, Dr. Da Costa thinks that the blood is clotting in the sac of this aneurism, and if this process goes on there will be a complete cure. You will seldom see a cure where the benefit to be derived from the iodide of potassium is so very marked. Dr. Da Costa thinks that the only treatment really worth anything is that by the use of *full* doses of iodide of potassium and a moderate diet, rather under- than overfeeding the patient, and absolute rest in bed. This latter injunction is very important, for we would not have had such good results in this case if the patient had been allowed to be up and about.

REMARKABLE TENACITY OF LIFE.

To the Editors of the THERAPEUTIC GAZETTE:

GENTLEMEN:—A most remarkable case, showing the tenacity of human life, has occurred in my practice, an account of which may, perhaps, benefit the profession.

On the morning of the 16th of March I was summoned as coroner to the inquest of a child in the vault of the water-closet adjacent to one of the hotels of this town. It had been there on the frozen excrement about two hours. It had been thrown forcibly by the mother down the hole, and then pushed out of sight under the flow with a broom-handle, so that nothing but the hand and wrist were to be seen. With a pair of blacksmith's tongs the hand was grasped and the child removed. It was pale, cadaveric, cold, motionless, with about one foot of cord attached to the umbilicus. I called for a bucket of hot water and immersed the child, also using artificial respiration. After a few minutes noticed a gasp. I removed the child to a warm room in the hotel, and used friction, artificial respiration, and immersions in hot water alternately, and in about an hour the body was fully restored to life, a fine boy of nine pounds, and perfect with the exception of an abrasion on the back and the contusion of the hand made by the tongs in extrication from the vault. As soon as life began to manifest itself blood began to ooze from the cord, which I tied properly.

The mother after her delivery, which occurred on the floor of the water-closet, cleaned up the floor with a mop and went to bed, stating she was sick. She was removed to a home over a half-mile distant, when the after-birth came of its own power. I hunted her up in the afternoon, when the particulars were made known. The girl is 20 years old, unmarried, and will not take her offspring. Mother and child doing well at present.

GEORGE ROBERTS, M.D.

CREIGHTON, NEB.

VINUM COCÆ.

The *Fortschritt* of January 5, 1886, gives the following prescription for the wine of coca: Take 30 grammes of foliæ cocæ and moisten the same with diluted alcohol, and add 1 litre of wine (Muscat, sherry, or Malaga). A better and quicker way is, if instead of the coca-leaves the corresponding quantity of the fluid extract—*i.e.*, 30 grammes pro litre of wine—is taken.

QUININE IN CHRONIC DYSENTERY.

The following case, reported to us by DR. CHEVES BEVILL, of Winfield, Ark., may be of interest to some of our readers:

R. P., aged 55, a very stout man, had typhoid fever some ten years ago, and has suffered ever since, more or less, with his bowels, and especially for the last three years, from severe chronic dysentery, with griping and bloody stools. He had been treated by five or six physicians, and no one seemed to do any good. The different astringents, such as acetate of lead, sulphate of zinc, sulphuric acid, creasote, nux vomica, opium, and pernitrate of iron were employed. Fluid extract of ergot and paregoric did him a great deal of good for two or three months, while using it, but it failed at last, and he was getting into such a state that there seemed no chance for him to live much longer. At

this time he began to have chills and fever, and Dr. Bevill was called to see him. He was extremely weak. Quinine was given in large doses, and morphine sul., gr. ⅛ to ¼ with the dose, to ease the griping pains. He was kept on this treatment for three or four weeks. This was in September and October last; and since the 10th of October he has had only two bloody stools. He lives in a malarious region, but had no chills until September last for years. He now is healthy, can eat anything he wants. Dr. Bevill is sure it was the quinine that cured him. If some, or any, of our readers know of such cases being benefited by such treatment, it is to be hoped they will report them.

CHILDBIRTH DURING AN ATTACK OF SMALLPOX. THE INFANT NOT INFECTED.

Dr. R. J. Banning writes to the *British Med. Journ.*, February 20, 1886, an account of a case in which a woman, during the height of a tolerably severe attack of confluent smallpox, gave birth to an infant perfectly uninfected. The baby was vaccinated within a few hours after birth and successfully, both mother and child doing well. This fact is not in accordance with the general opinion that a child born during a developed attack of smallpox in the mother must necessarily be infected.

ON THE TOXIC NATURE OF IVY.

Dr. Al. Jandouis having learned of several fatal accidents produced in children by the eating of berries of hedera helir, the ordinary ivy, examined this plant, and records his results in the *Deutsche Medizinische Wochenschrift* of February 8, 1886. Pliny long ago spoke of its toxic nature, and Matthiolus praised its emmenagogue virtues.

The berries were found to contain sixty per cent. of pulp and forty per cent. of semen. The former consists of a dark red pigment colored green by ammonia and hydrochloric acid, of grape-sugar, gum, and a resin, which constitutes an amorphous green-yellowish powder, having at first a sweetish, then a sharp, pungent taste; there exist also albumen, fibrin, water, and mineral matters in the pulp. The semen consists of a fatty oil, albuminous matters, and a peculiar substance of an acrid and astringent taste, almost insoluble in water, mineral matters, and water. Of all these constituents the resin in the pulp and the astringent substance of the seed can alone be regarded as poisonous elements, and to their combined action the toxic character of ivy is to be attributed.

PYRIDIN IN ASTHMA.

Dr. Joseph S. Neff (*New York Med. Journ.*, March 13, 1886) has followed the example set by Sée, already published in the columns of the Gazette, in treating asthma by inhalations of pyridin. Dr. Neff used from one-half to one drachm poured upon a saucer placed in one end of a small room, with doors and windows closed, or, what is better still, a large closet, and allowed patients sitting a little distance from it to inhale vapors mixed with the air. The absorption is immediate, the drug being detected in the urine in a few moments.

Upon the healthy adult, as shown in himself, assistants, and nurses, there was almost universally a flushing of the face, with quickening of the pulse and respiration, the latter lasting but a few moments, the former from fifteen minutes to ten hours, depending largely upon the length of time of inhalation. In several instances temporal headache of a slight character persisted for several hours; at times a peculiar full sensation approaching giddiness is experienced.

The fact that in the healthy the pulse and respiration are quickened for a few minutes does not hold good in asthmatic patients, for, almost without exception, the heart's action, which previously may have been accelerated, slowly falls to the normal, without change in character or rhythm; and less rapidly the respirations, which become slower, easier, and more full, the intense longing for air disappearing, with diminution of the oppression.

In most cases there is a desire to sleep, which in some becomes irresistible; this resembles, however, normal sleep, from which patients are easily aroused, and without insensibility or loss of intelligence, thus distinguishing it from the sleep produced by narcotics and anæsthetics, although there is a slight loss of muscular reflex action.

Dr. Neff used this preparation many times in a series of twelve cases of asthma. The following represents a summary of his results:

Four were females, eight were males; the ages ranged from twenty-six to sixty-five, divided as follows:

Nervous pulmonary asthma, three. No return of attacks in any.

Cardiac asthma, three. All were relieved of attacks. One remained under observation three months, and one for two weeks only.

Bronchial asthma, three. In one there was no return during ten weeks' stay in the hospital. The two others were relieved of their attacks and insisted upon their discharge, being under treatment less than three weeks.

Asthma in advanced phthisis, two. In one there was but slight relief during the paroxysm; in the other there was absolutely no benefit.

Asthma as a complication of gout, one. No return in a month. Albuminuria from interstitial nephritis was present.

Of the fourteen cases reported by Sée, four were in females, ten in males, from thirty to sixty-eight years of age. Nine were what he terms "pure asthma," all of which were more or less relieved, and five cases of cardiac asthma.

In one case of twelve years' duration pyridin caused nausea and vertigo after eight days of treatment, which necessitated its discontinuance, although great relief was obtained. Nausea Dr. Neff has not seen; vertigo but once.

In one or two cases where the expectoration had been purulent it lost that character after the inhalation.

All unpleasant symptoms seem to be confined to cases with long-standing emphysema, or valvular or degenerative heart-disease, with small, irregular pulse. In young, robust people with "simple" pulmonary asthma there seems to be drowsiness alone.

The beneficial results obtained from this remedy seem to be from its action on the sympathetic and the medulla.

Any depressing effects on the heart would seem due rather to the interference with the pulmonary functions, death being caused, in the lower animals at least, by paralysis of the respiratory centres.

Pyridin is not to be classed as a curative agent. Most likely its greatest value will be seen in cases of simple or nervous pulmonary asthma, when the iodine preparations cannot be borne, or nitro-glycerin and sodium nitrite are contraindicated. Although in the bronchial or catarrhal forms of the disease the relief of the paroxysms has been marked in ninety per cent. of the cases treated, of the remaining number nearly all had emphysema of long standing.

In asthma occurring in advanced phthisis the drug should be given with care on account of the small amount of lung-tissue left unaffected, especially where there is a great degree of consolidation with fibroid induration, when, perchance, the spasm may be relieved, but few air-vesicles remain in condition to respond. Here at least morphine will hardly be superseded.

In phthisis the recurring dyspnœa and orthopnœa are relieved during the period of inhalation only, returning in a few moments, and at times with increased violence.

With so little experience, this drug must be administered with a certain degree of caution until its action is thoroughly understood, severe or persistent headache, nausea, vomiting, and vertigo acting as danger-signals, warning us to proceed with care.

THE VITALITY OF CHOLERA BACILLI.

GUTTMANN and NEUMANN publish in the *Centralblatt für die Med. Wiss.* of February 13, 1886, some of their observations made on the vitality of cholera bacilli. They found the vital duration of these pathogenetic microbes relatively very high. Bacilli cultured on "*agar-agar*" were, after the expiration of two hundred and nineteen days, found still living, and capable of propagation, and those planted on peptone-gelatin showed equal signs of life after two hundred and nineteen days. From the former it was even possible to secure pure cultures capable of causing infection.

ARTIFICIAL MILK.

It is a curious fact that when a fat is boiled with caustic potash in the relation of fifty parts of alkali to one hundred parts of fat, it is gradually dissolved: the glycerin, however, is not set free. If the alkaline solution is now acidified, the original fat will be regained; but it will have new properties. It is now soluble in alcohol, and when added to ordinary fats, even in very small amounts, it imparts to them the property of forming complete emulsions with extraordinary dilute solutions of the alkaline carbonates. In order to make a liquid which shall possess the appearance and the most important chemical properties of milk, Chichkoff proceeds as follows. Some of the modified fat is added to ordinary fat, and the mixture emulsified with a dilute solution of potassium or sodium carbonate. Calcium and magnesium phosphates are then added in the form of powders, and also a certain amount of casein which has been rubbed up with a little ammonia. Another

solution is now made by dissolving milk-sugar in dilute hydrochloric acid and adding a solution of albumen. The two liquids are now cautiously mixed, the acid liquid being poured into the alkaline one, and the mixture well stirred after each addition. This artificial milk does not contain the ferment occurring in natural milk, but if a little sour milk is added to it, a thick layer of cream soon rises which possesses all the properties of real cream and can be worked into butter. The artificial milk also curdles and forms whey. The taste of the milk, however, is not quite as palatable as it might be; but this may be improved by further experimenting. This peculiar power of the modified fat to form emulsions may be of use in pharmacy.—*Druggists Circular.*

A NEW NARCOTIC AND MYDRIATIC.

According to a note appearing in the *Deutsche Med. Wochenschrift* of February 8, 1886, PETIT, of Paris, examined the rind of Bowdichia major (sehipira major), which, in Brazil, is used by the natives as a febrifuge, and found it to contain an alkaloid, which, in doses of $\frac{1}{8}$ grain in frogs and in 1-grain doses in guinea-pigs, showed distinct narcotic properties. In the latter animals the alkaloid causes also convulsions. Besides being a narcotic the drug evinced also powerful mydriatic properties.

ON THE POSITION IN NUTRITION OF THE VARIOUS CLASSES OF FOOD-STUFFS.

In no department of science, perhaps, has more energy been shown than in the inquiry as to the part played by the various classes of food-stuffs in the animal economy. Nowhere has the evolution of ideas and theories followed more rapidly its course, thanks to the indefatigable zeal of the workers in this branch. Liebig was one of those who did much to place the subject on a scientific basis, and by the contribution of carefully ascertained facts to give the whole research a stimulus to which we are largely indebted for the progress accomplished. We have had to modify, it is true, his views on the correlation of exercise and the excretion of urea; and the altered views materially influence the theory of nutrition. The opinion formerly entertained that urea represented the wear and tear of the tissues of the body, and therefore bore a constant relation to the work done by them, has to be abandoned. The albuminoid constituents of the tissues are in such a condition of stability, that they do not themselves readily undergo metabolism in conditions of health; and it is only under the influence of an acceleration of metabolism on the one hand, or a diminished supply of albuminoids on the other, that they are decomposed. That portion of the albuminoid constituents of the food which circulates with the blood is more easily split up; and, as the activity of the cellular elements in effecting these changes is to some extent dependent on the amount of this "circulating albumen," so the excretion of urea will correspond to some extent to the amount of nitrogenous material taken in with the food. There is, however, for every individual a limit to the activity of his cellular elements, and if this be surpassed, metabolism will be diminished and oxidation only imperfectly performed. Hence a liberal nitrogenous diet does not, of itself, tend to an increase of body-weight or strength.

Contrary to the behavior of the albumens in the organism, the extent of fatty metabolism is independent of the ingestion of fat, but is markedly affected by the amount of work performed by the organism, and by the maintenance of bodily heat. The material effects of albumen and fat in the system are in a certain sense opposed, for the former increases the tissue-waste, and secondarily the oxidation, while fat induces the opposite effects. This action of fat is of special importance, when we have to consider how best to attain an increase of the constituents of the body. With an exclusive supply of albumen, only very small quantities of this substance can ever be retained in the body; for each accession of albumen to the food gives rise to an increase of waste, until, after a few days, the balance between income and expenditure is again established. With a simultaneous administration of albumen and fat a less amount of albumen is on this account necessary to meet the material wants of the organism, and if it be present in excess the metabolic processes do not attain the same proportions as with a diet consisting exclusively of albumen, so that a larger proportion of the excess remains undecomposed in the body and adds to its weight. The fat stored in the body acts in like manner with the fat contained in the food, since it likewise lessens the waste of tissue and secondarily the oxidation. This is the reason why corpulent individuals frequently continue to gain in bulk, although they are not in the habit of indulging immoderately in food. The action of carbohydrates

resembles that of fat in protecting from metabolism a certain amount of the circulating albumen; and if given in excess they will, in consequence of the greater facility with which they undergo metabolism, lead to the more hardly metabolizable fat being left unchanged and deposited in the tissues. From this we may conclude that the generally assumed transformation of carbohydrates into fat does not take place.

As already stated, an increase in the nitrogenous substances in the blood leads to increased metabolism, and at the same time the amount of "circulating albumen" is augmented. This explains why a highly-fed animal can better withstand privation than one more poorly nourished, since it is only after several days that the stock of circulating albumen will become exhausted, and the organism is forced to draw on its own tissues for nitrogenous material. Let us take an animal fed on a quantity of albuminoids insufficient for its needs, it will then have to draw upon its own tissues to make up the deficiency. If some fat be added, a part of the albumen is economized, and the amount of nitrogenous waste, as shown by the urea excreted, is lessened; so that in a well-fed animal starvation provokes a diminution, but in a poorly-fed animal an augmentation of nitrogenous metabolism. Similarly alcohol, in consequence of its metabolism and of its fat-sparing action, behaves in the character of a food. The main value of stimulants is, however, more in the direction of slowing metabolism and so lessening waste, than from any nutritive qualities which they may possess. Most of them, moreover, have an influence on the process of digestion which in certain cases may, by rendering it slower, conduce to more perfect assimilation.—*British Medical Journal*, February 13, 1886.

TWENTY-NINE CASES OF TRACHEOTOMY OF A PRIVATE PRACTITIONER.

Buchholtz, in a recent inaugural essay (Berlin, December, 1885, Niethe, p. 28), reports the results of twenty-nine cases of tracheotomy performed in private practice against croup and diphtheria. The number of lives saved out of these twenty-nine was twelve. This is a very good showing, and a welcome communication from the usually rather neglected statistics of the private practice in a small town (Kottbus, Prussia). We have here another proof that even under the most unfavorable circumstances the results of tracheotomy are more favorable in the private house than in the hospital.

TUMBEKI: A PERSIAN NARCOTIC.

In the consular reports from Trebizond, for some years past, mention has been made of a vegetable product, "tumbeki," occurring in the same list as tobacco, and evidently an article of regular commerce between Persia and Turkey. Quite recently also, in an interesting article in *Harper's Magazine* on "The Domestic and Court Customs of Persia," tumbeki is referred to as a species of tobacco in high repute in Persia, which, owing to its remarkable narcotic properties, is always smoked in a water-pipe. In order to obtain more definite information with regard to tumbeki, and the importance of its narcotic and possible medicinal properties, Mr. E. M. Holmes, the curator of the Museum of the Pharmaceutical Society, has entered into correspondence with consular and other authorities upon the subject; and the results were embodied in a communication made at an evening meeting of the Pharmaceutical Society on Wednesday, February 10. Mr. Holmes found the authorities somewhat at variance as to whether tumbeki is the product of *Nicotiana rustica* or *N. persica;* but leaves, which he received as tumbeki from Trebizond and Constantinople, both correspond in character with *N. persica*, the stem-leaves of which are sessile, whilst *N. rustica* has stalked cordate leaves. It appears, further, that there are three qualities of tumbeki,—the Shiraz, Kechan, and Teheran,—all derived from the same plant, though the value of the first is double that of the last two. In order to test the accuracy of the statement that tumbeki contains more nicotine than tobacco-leaves (*N. tabacum*), portions of four samples were submitted to analysis by Messrs. Eastes and Ince. After trying various processes for the estimation of the nicotine, they arrived at the conclusion that the most reliable method consisted in preparing an extract of the leaves with dilute sulphuric acid, removing albuminous matters from the extract, and precipitating the alkaloid with a standard solution of Mayer's reagent (a mixture of mercuric chloride and potassic iodide). By this method, they obtained results corresponding to the following average percentages of nicotine: Shiraz, 5.835 per cent.; Ispahan, 5.4945 per cent.; Hidjaz, 2.046 per cent.; and Kechan, 2.90925 per cent. In further analysis of the leaves, the authors found the extractive matter to range from forty per cent. in the Kechan

to fifty-five per cent. in the Shiraz sample; the saccharine matter to be highest in the Kechan sample, whilst the ash was about twenty-five per cent. in all the samples.—*British Med. Journ.*, February 27, 1886.

A SPECIMEN OF A GERMAN MIXTURE.

The balsam de Bori, up to rather recent times not infrequently prescribed by heroic German physicians, is truly a little pharmacopœia by itself, and unquestionably also a good thing—for the apothecary. The prescription for the balsam reads as follows:

℞ Tinct. angelic.,
Tinct. aloes,
Tinct. myrrhæ,
Tinct. benz., aā ʒvii;
Ol. lavendulæ, gtt. ii;
Bals. Peruv., ʒiii;
Stor. calam.,
Olib. pulv., aā ʒi.

Fiat mistura, digere secundum artem et filtra.—Bon appetit!

VESICATING INSECTS.

The wings of vesicating insects possess a singular softness of the elytra and the integument, differing from that of other insect tribes. The explanation of this fact is found in the histological, and not on the chemical, characters of the wing, as was at one time supposed. Between the two layers, which are connected at their edges by chitin, there is a considerable space, and the two layers are connected by chitinous pillars, which, although thin and delicate, form substantial supports. In most other insects the chitinous layers are much thicker, the pillars more numerous, and the spaces are almost obliterated. The peculiarities noted have, it is believed, much to do with the irritation produced by minute particles of wings when applied to the skin of human beings.—*Medical Press*, January 13, 1886.

THE MEDICAL USE OF SACCHARINE.

At the meeting of the Manchester Medical Society, held February, 1886, Dr. Dreschfeld (*Brit. Med. Journ.*, March 13, 1886) showed some preparations, and spoke of the therapeutic uses of this new sweet compound (benzoic sulphinide, or anhydro-ortho-sulphamin benzoic acid) obtained from coal-tar. This body was prepared by Dr. Fahlberg, of New York, and its physiological properties had been recently studied by Stutzer and Mosso. Saccharine was a white powder, of acid reaction, soluble in 500 parts of distilled water, and a little more soluble in alcohol and ether. It was intensely sweet, and a dilution of 1 in 10,000 had still a very sweet taste, very much like that of sugar, together with a peculiar by-taste like bitter almonds (solution of sugar lost its sweetness in a dilution of 1 in 250). Saccharine, when given internally or subcutaneously, was exuded completely by the urine in an unaltered state; it was, therefore, not decomposed in the body. Neither the saliva nor the fæces contained any traces, even after large doses. It had scarcely any retarding effect on the digestion of either proteids or hydrocarbons; in fact, given in small quantities, it increased the diastatic action of malt in the presence of sugar. It had no injurious effect if given even in large quantities (2 to 5 grammes) in man, and produced no appreciable alteration in the appetite. The urine showed no alteration during its administration either in specific gravity or quantity. The urea and sulphuric acid in the urine did not show any changes. The urine had, however, an intensely sweet taste, and did not undergo fermentation readily. Saccharine was slightly antiseptic. Beyond being a substitute for sugar, it possessed no therapeutic properties, except that, in two cases of acid dyspepsia, it relieved some of the troublesome symptoms. Its use was indicated in diabetes and obesity. In diabetic patients, it had no effect either on the quantity of urine or on the amount of sugar passed.

A CASE OF POISONING WITH STEINER'S VERMIN-KILLER.

At the seventh meeting of the Medico-Chirurgical Society of Edinburgh for this year, Dr. Allan Gray read a paper on "A Case of Strychnine-Poisoning, with an Analysis of Steiner's Vermin-Killer." In the case on which the communication was based there was a remarkable delay of the fatal result for three or four hours. The patient was alcoholic, and had been imbibing freely previous to the suicidal act, which consisted in the swallowing of the contents of a packet of Steiner's vermin-killer. Dr. Gray thought that possibly the presence of the alcohol was sufficient explanation of the slow advance of the symptoms. He then explained the method of analysis followed, laying stress on the sulphuric acid and bichromate of potassium test for strychnine. Appended to the paper

was a comparative analysis of the different vermin-killers.

Dr. Foulis showed scrapings from a wall-paper containing a large proportion of arsenic, and dwelt on the great danger accruing to the too easy possibility of obtaining such poisons. Some discussion followed as to the cause of the delay in the fatal result.

Dr. Philip asked if Dr. Gray was prepared to place implicit confidence in the sulphuric acid and bichromate of potassium test for strychnine, and if the purely chemical tests should not always be supplemented by the physiological. He referred to a curious case, where the first verdict of poisoning by strychnine had been overthrown through the absence of the evidence afforded by these latter.

Dr. Gray thought the chemical tests often failed through the fault of the chemist.—*Medical Press*, March 10, 1886.

THE INTERNAL ADMINISTRATION OF ANTISEPTICS.

The administration of antiseptic drugs, either as prophylactics or as remedies, has been frequently resorted to in the treatment of infective diseases, but not hitherto with an amount of success which has encouraged the profession at large to adopt the method. Some experiments, however, which Dr. Theodore Cash is now conducting for the Local Government Board, appear to justify the hope that this line of treatment may eventually be useful. In a communication recently made to the Physiological Society, he stated that he had been led to test the influence of perchloride of mercury, because it was retained in the body for some days after its administration had ceased, and because it was still a powerful germicide even when very greatly diluted. He found, in an experiment on a rabbit, that, after a quantity of perchloride of mercury, equal to about 8 milligrammes per kilogramme of body-weight, had been injected hypodermically, in divided and highly diluted doses in the course of seven days, the animal only suffered a passing disorder after inoculation with a virus of anthrax which killed another rabbit in forty-four hours. The animal, moreover, was found to be protected against further inoculations with virulent anthrax. A smaller dose (equal to about 5 milligrammes per kilogramme of body-weight) was found to delay, but not to prevent, the onset of the disease. The number of bacilli found in the blood after death in such a case was very small, but it was found that their virulence had not been diminished, the blood of the animal producing an unmitigated and unmodified attack of anthrax in other animals.—*British Med. Journ.*, February 13, 1886.

THE PRESERVATION OF SALICYLATE OF SODIUM.

Salicylate of sodium belongs to the class of preparations which undergo change in time. If salicylate of sodium, either in crystals or in powder, is exposed in a glass vessel to the light, in four to six weeks the exposed portions become darker, and lose their faintly acid reaction, and when dissolved form a dark solution, while the portions protected from light remain colorless, and retain an acid reaction. Salicylate of sodium is also particularly susceptible to the action of moisture. Salicylate of sodium perfectly dry and kept in glass away from the light remains unaltered, while another portion kept in paper at the same temperature soon becomes useless, lumpy, and gray. It seems, therefore, necessary to protect salicylate of sodium from light and moisture. It has also been noticed that the character of the water in which the solution has been made is of influence in the permanence of the solution. When spring water is used, a solution of salicylate of sodium will become brown in a few hours, while it remains colorless when distilled water is used. —*Pharm. Centralhalle*, January 7, 1886.

CONVULSIONS IN AN INFANT CURED BY MORPHINE.

Dr. H. Plummer, of Harrodsburg, Ky., reports in the *Medical Record* for March 27, 1886, the case of an infant, 22 months old, who was seized after a short period of malaise with convulsions. She was seen after the second convulsion, and did not then appear to be very ill, but was fretful. The temperature was 102° and there was some little cough, but there were no signs of pneumonic trouble. Bromide of potassium in 5-grain doses was given every hour, but the convulsions increased in severity and frequency. The bowels had been moved by calomel and castor oil. In the afternoon of the second day the child was in the following condition: The tongue was protruded between the teeth, swollen, and constantly in motion; the forearms were flexed and rigid, the thumbs being firmly drawn into the palms, and the lower

extremities were likewise rigid. The child was now unable to swallow, and the pupils were widely dilated. The convulsive attacks recurred at such short intervals that they seemed to be continuous. Other remedies having proved ineffectual, Dr. Plummer determined to employ morphine, and accordingly gave ⅙ grain hypodermically. In a few minutes the little patient fell into a sleep, in which she remained, awaking only to drink, for twenty hours. The pupils became of nearly the normal size, and the muscular system became relaxed. From this time she continued to improve, although she seemed nervous and fretful for a time, and the convulsions did not return.

A NEW METHOD OF KEEPING PERFORATION OF THE MEMBRANA TYMPANI OPEN.

Dr. McKeown (Belfast), at a recent meeting of the Academy of Medicine in Ireland, described a method of making an artificial perforation of the membrana tympani, which would remain open for a period varying from two weeks to two months (*Medical Press*, March 10, 1886). He made a triangular flap of the membrane, commonly selecting either that part in front of or that behind the handle of the malleus. He used a speculum, and illuminated the membrane by the frontal mirror. He then introduced the knife,—a very fine straight knife with thin handle,—punctured the membrane in front of or behind top of handle of malleus, cut upwards as far as he could; then he made a second incision, beginning below, either at anterior or posterior part of membrane, as the case might be, and in a horizontal line with lower end of first incision, and cut upward until the two incisions joined. The flap thus formed, unless in case of very thickened membrane, fell down, or might be turned down with a fine probe, and commonly remained in position, adhering to the membrane below by blood exuded from the cut surface. He had operated on a considerable number of cases, some of long standing, and he gave particulars of some of the most interesting. The ordinary incisions hitherto practised, except to discharge products of inflammation, were of no therapeutic use whatever. The operation proposed was not for the purpose of making an artificial way for the waves of sound, but to give rest to the ear for a long period, and to induce a nervous and vascular equilibrium favorable to the absorption of deposits and restoration of function. Most troublesome obstructions of Eustachian tubes of long standing had given way to this treatment alone. As to relief of tension in old cases, a simple incision, closing in a day or two, could do no good, but an opening for a period of two weeks to two months might do a great deal. Time was the very essence of the question from a therapeutic point of view. He illustrated the use of the method in diagnosis, and also in opening a way for efficient treatment of some cases of hypertrophic change of the lining of the middle ear. So far as he could follow his cases he found none were made worse, some were not benefited, but the majority were relieved in a greater or less degree, some to a remarkable extent. According to authorities, after certain operations on the middle ear a relapse or even an aggravation followed; but after this method, in which the fundamental points were a large opening, no destruction of tissue, and the avoidance, as a rule, of all irritation, the improvement had been found sometimes to become even greater after the perforation had closed for some time.

THE MODE OF ADMINISTRATION OF SPARTEINE.

We have already published abstracts of the papers of various authors as to the use and physiological action of this new cardiac remedy. M. Houde publishes the two following formulæ in the *Journ. de Med.*, January, 1886, for the administration of this drug: Sulphate of sparteine, 7½ grains; milk-sugar, 75 grains; simple syrup, q.s. M. Div. in pill No. 50. S.—Two to ten of these pills may be given daily, according to indications; each pill contains $\frac{1.5}{100}$ grain. Or, sulphate of sparteine, 4½ grains; distilled water, 32 minims; syrup of bitter orange-peel, 10 ounces. M. S.—Three teaspoonfuls of this syrup are about equivalent to two of the pills made under the preceding formula.

VIBURNUM PRUNIFLORIUM IN ABORTION.

Dr. W. Macfie Campbell states in the *Brit. Med. Journ.*, February 27, 1886, that he has had an opportunity of testing the use of viburnum pruniflorium in several cases of habitual miscarriage, and can entirely endorse the good opinion which is generally held as to its value; and he reports six cases in five of which the administration of 3 grains of the solid extract three times a day served to prevent threatened miscarriage.